

Heptatonic Scales

56 Modes (Abstract)

Degree	Scale												
I	1	-	2	-	3	4	-	5	-	6	-	7	1
II	1	-	2	b3	-	4	-	5	-	6	b7	-	1
III	1	b2	-	b3	-	4	-	5	b6	-	b7	-	1
IV	1	-	2	-	3	-	#4	5	-	6	-	7	1
V	1	-	2	-	3	4	-	5	-	6	b7	-	1
VI	1	-	2	b3	-	4	-	5	b6	-	b7	-	1
VII	1	b2	-	b3	-	4	b5	-	b6	-	b7	-	1

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Contents

16 Heptatonic scales / 56 modes

Overview	3-4
12 Tetrachords	5
12 Chords	6
16 Heptatonic scales / 56 modes :	
A1. Melodic major (Diatonic major modes)	7
B1. Harmonic major	8
C1. Melodic minor	9
D1. Harmonic minor	10
Structure	11-12

For more documents on *Scales*, click here :
[Docs, Charts & Diagrams \[Google Drive\]](#)

16 Heptatonic scales / 56 modes

Overview (1)

A. Melodic Major Modes

4 scales (14 modes)

Scale / Mode	Scale													
A1/I Melodic major (Diatonic major modes)	1		2		3	4		5		6		7	1	
A2/I Melodic major $\flat 2$	1	$\flat 2$			3	4		5		6		7	1	
A3/I Melodic major $\flat 5$	1		2		3	4	$\flat 5$			6		7	1	
A4/I Melodic major $\flat 2 \flat 5$	1	$\flat 2$			3	4	$\flat 5$			6		7	1	

A1. 7 modes (I-VII) - A2. 3 modes (I, IV, V) - A3. 2 modes (I, IV) - A4. 2 modes (I, IV)

B. Harmonic Major Modes

4 scales (14 modes)

Scale / Mode	Scale													
B1/I Harmonic major	1		2		3	4		5	$\flat 6$			7	1	
B2/I Harmonic major $\flat 2$ (Byzantine scale)	1	$\flat 2$			3	4		5	$\flat 6$			7	1	
B3/I Harmonic major $\flat 5$	1		2		3	4	$\flat 5$		$\flat 6$			7	1	
B4/I Harmonic major $\flat 2 \flat 5$	1	$\flat 2$			3	4	$\flat 5$		$\flat 6$			7	1	

B1. 7 modes (I-VII) - B2. 3 modes (I, IV, V) - B3. 2 modes (I, IV) - B4. 2 modes (I, IV)

C. Melodic Minor Modes

4 scales (14 modes)

Scale / Mode	Scale													
C1/I Melodic minor	1		2	$\flat 3$		4		5		6		7	1	
C2/I Melodic minor $\flat 2$ (Neapolitan major scale)	1	$\flat 2$		$\flat 3$		4		5		6		7	1	
C3/I Melodic minor $\flat 5$	1		2	$\flat 3$		4	$\flat 5$			6		7	1	
C4/I Melodic minor $\flat 2 \flat 5$	1	$\flat 2$		$\flat 3$		4	$\flat 5$			6		7	1	

C1. 7 modes (I-VII) - C2. 3 modes (I, IV, V) - C3. 2 modes (I, IV) - C4. 2 modes (I, IV)

D. Harmonic Minor Modes

4 scales (14 modes)

Scale / Mode	Scale													
D1/I Harmonic minor	1		2	$\flat 3$		4		5	$\flat 6$			7	1	
D2/I Harmonic minor $\flat 2$ (Neapolitan mainor scale)	1	$\flat 2$		$\flat 3$		4		5	$\flat 6$			7	1	
D3/I Harmonic minor $\flat 5$	1		2	$\flat 3$		4	$\flat 5$		$\flat 6$			7	1	
D4/I Harmonic minor $\flat 2 \flat 5$	1	$\flat 2$		$\flat 3$		4	$\flat 5$		$\flat 6$			7	1	

D1. 7 modes (I-VII) - D2. 3 modes (I, IV, V) - D3. 2 modes (I, IV) - D4. 2 modes (I, IV)

Common notes

Basic Modes

2	5
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Major Modes

3	4
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Melodic Modes

6

Altered $\flat 2$ Modes

$\flat 2$	5
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Minor Modes

$\flat 3$	4
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Harmonic Modes

$\flat 6$

Altered $\flat 5$ Modes

2	$\flat 5$
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All Modes

7

Altered $\flat 2 \flat 5$ Modes

$\flat 2$	$\flat 5$
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16 Heptatonic scales / 56 modes

Overview (2)

A. 4 Melodic major scales (14 modes)

A1. Melodic major (Diatonic major modes)

- I Ionian (*Melodic major*)
- II Dorian
- III Phrygian
- IV Lydian
- V Mixolydian
- VI Aeolian (*Natural minor scale*)
- VII Locrian

A2. Melodic major ♭2

- I Melodic major ♭2 (Ionian ♭2)
- IV Lydian ♭6
- V Mixolydian ♭5

A3. Melodic major ♭5

- I Melodic major ♭5 (Ionian ♭5)
- IV Lydian ♭2

A4. Melodic major ♭2 ♭5

- I Melodic major ♭2 ♭5
- IV Lydian ♭2 ♭6

B. 4 Harmonic major scales (14 modes)

B1. Harmonic major

- I Harmonic major (Ionian ♭6)
- II Dorian ♭5
- III Phrygian ♭4
- IV Lydian ♭3
- V Mixolydian ♭2
- ♭VI Lydian ♯2 ♭5 (Aug. Aeolian)
- VII Locrian ♭♭7

B2. Harmonic major ♭2 (Byzantine mode)

- I Harmonic major ♭2 (Ionian ♭2 ♭6)
- IV Lydian ♭3 ♭6
- V Mixolydian ♭2 ♭5

B3. Harmonic major ♭5

- I Harmonic major ♭5 (Ionian ♭5 ♭6)
- IV Lydian ♭2 ♭3

B4. Majeur harmonique 2m/5b

- I Harmonic major ♭2 ♭5 (*Persian scale*)
- IV Phrygian ♯4 ♯7

C. 4 Melodic minor scales (14 modes)

C1. Melodic minor

- I Melodic minor (Ionian ♭3/Dorian ♯7)
- II Dorian ♭2 (Phrygian ♯6)
- ♭III Lydian ♯5 (Aug. Phrygian)
- IV Lydian ♭7 (Mixolydian ♯4)
- V Mixolydian ♭6 (Aeolian ♯3)
- VI Aeolian ♭5 (Locrian ♯2)
- VII Locrian ♭4 (Dim. Ionian)

C2. Melodic minor ♭2 (Neapolitan major)

- I Melodic minor ♭2 (Ionian ♭2 ♭3)
- IV Lydian ♭6 ♭7
- V Mixolydian ♭5 ♭6

C3. Melodic minor ♭5

- I Melodic minor ♭5 (Ionian ♭3 ♭5)
- IV Mixolydian ♭2 ♯4 (Lydian ♭2 ♭7)

C4. Melodic minor ♭2 ♭5

- I Melodic minor ♭2 ♭5 (Locrian ♯6 ♯7)
- IV Phrygian ♯3 ♯4

D. 4 Harmonic minor scales (14 modes)

D1. Harmonic minor

- I Harmonic minor (Aeolian ♯7)
- II Locrian ♯6
- ♭III Ionian ♯5
- IV Dorian ♯4
- V Phrygian ♯3
- ♭VI Lydian ♯2
- VII Locrian ♭4 ♭♭7 (Dim. Mixolydian)

D2. Harmonic minor ♭2 (Neapolitan minor)

- I Harmonic minor ♭2 (Phrygian ♯7)
- IV Aeolian ♯4
- V Locrian ♯3

D3. Harmonic minor ♭5

- I Harmonic minor ♭5 (Aeolian ♭5 ♯7)
- IV Dorian ♭2 ♯4 (Phrygian ♯4 ♯6)

D4. Harmonic minor ♭2 ♭5

- I Harmonic minor ♭2 ♭5 (Locrian ♯7)
- IV Phrygian ♯4

16 Heptatonic scales / 56 modes

12 Tetrachords

2 Tones		1st (Lower)						2nd (Upper)				
Phrygian	1-2-1	2T Phry	1	b2	-	b3	b4	#5	6	-	7	1

2½ Tones		1st (Lower)						2nd (Upper)						
Phrygian	1-2-2	2T½ Phry	1	b2	-	b3	-	4	5	b6	-	b7	-	1
Harmonic	1-3-1	2T½ Harm	1	b2	-	-	3	4	5	b6	-	-	7	1
Minor	2-1-2	2T½ Min	1	-	2	b3	-	4	5	-	6	b7	-	1
Major	2-2-1	2T½ Maj	1	-	2	-	3	4	5	-	6	-	7	1

3 Tones		1st (Lower)						2nd (Upper)								
Phrygian	1-2-3	3T Phry	1	b2	-	b3	-	-	#4	b5	bb6	-	bb7	-	-	1
Harmonic	1-3-2	3T Harm	1	b2	-	-	3	-	#4	b5	bb6	-	-	b7	-	1
Minor	2-1-3	3T Min	1	-	2	b3	-	-	#4	b5	-	b6	bb7	-	-	1
Major	2-2-2	3T Maj	1	-	2	-	3	-	#4	b5	-	b6	-	b7	-	1
Major +	2-3-1	3T Maj+	1	-	2	-	-	#3	#4	b5	-	b6	-	-	7	1
Augmented 1	3-1-2	3T Aug1	1	-	-	#2	3	-	#4	b5	-	-	6	b7	-	1
Augmented 2	3-2-1	3T Aug2	1	-	-	#2	-	#3	#4	b5	-	-	6	-	7	1

Combination of Tetrachords

1st Tetrachords
2T
2T½
3T

2nd Tetrachords		
-	2T½	3T
2T	2T½	3T
2T	2T½	-

Intervals

1	b2	2	#2	3	4	#4	5	#5	6	#6	7	1
			#2		#3	#4		#5		#6		
1		2		3	4		5		6		7	1
	b2		b3	b4		b5		b6		b7		
		bb3					bb6		bb7			
	b9	9	#9		11	#11		b13	13			

Complementary Intervals						
	b2	2	b3	3	4	#4
	7	b7	6	b6	5	b5

16 Heptatonic scales / 56 modes

Chords (with Extensions)

A. Melodic major			
A1. Melodic major (Diatonic maj. modes)			
I	M7	9 11 13	
II	m7	9 11 13	
III	m7	b9 11 b13	
IV	M7	9 #11 13	
V	7	9 11 13	
VI	m7	9 11 b13	
VII	m7b5	b9 11 b13	
A2. Melodic major b2			
I	M7	b9 11 13	
IV	M7	9 #11 b13	
V	m7b5	9 11 13	
A3. Melodic major b5			
I	M7b5	9 11 13	
IV	M7	b9 #11 13	
A4. Melodic major b2 b5			
I	M7b5	b9 11 13	
IV	M7	b9 #11 b13	

B. Harmonic major			
B1. Harmonic major			
I	M7	9 11 b13	
II	m7b5	9 11 13	
III	m7 (7)	b9 - b13	
IV	mM7	9 #11 13	
V	7	b9 11 13	
bVI	M7#5	b9 #11 13	
VII	dim7	- 11 b13	
B2. Harmonic major b2 (Byzantine mode)			
I	M7	b9 11 b13	
IV	mM7	9 #11 b13	
V	7b5	b9 11 13	
B3. Harmonic major b5			
I	M7b5	9 11 b13	
IV	mM7	b9 #11 13	
B4. Harmonic major b2 b5			
I	M7b5	b9 11 b13	
IV	mM7	b9 #11 b13	

C. Melodic minor			
C1. Melodic minor			
I	mM7	9 11 13	
II	m7	b9 11 13	
bIII	M7#5	9 #11 13	
IV	7	9 #11 13	
V	7	9 11 b13	
VI	m7b5	9 11 b13	
VII	m7b5	b9 #11 b13	
C2. Melodic minor b2 (Neapolitan major)			
I	mM7	b9 11 13	
IV	7	9 #11 b13	
V	7b5	b9 11 13	
C3. Melodic minor b5			
I	mM7b5	9 11 13	
IV	7	b9 #11 13	
C4. Melodic minor b2 b5			
I	mM7b5	b9 11 13	
IV	7	b9 #11 b13	

D. Harmonic minor			
D1. Harmonic minor			
I	mM7	9 11 b13	
II	m7b5	b9 11 13	
bIII	M7#5	9 11 13	
IV	m7	9 #11 13	
V	7	b9 11 b13	
bVI	M7	#9 #11 13	
VII	dim7	- - b13	
2. Harmonic minor b2 (Neapolitan minor)			
I	mM7	b9 11 b13	
IV	m7	9 #11 b13	
V	7b5	b9 11 b13	
3. Harmonic minor b5			
I	mM7b5	9 11 b13	
IV	m7	b9 #11 13	
D4. Harmonic minor b2 b5			
I	mM7b5	b9 11 b13	
IV	m7	b9 #11 b13	

16 Heptatonic scales / 56 modes

A. Melodic major modes (14 modes)

A1. Melodic major (Diatonic major modes / Greek modes)

Name	Degr.	Chord	Scale										Tetrachords				
Ionian (<i>Melodic major</i>)	I	M7	1		2		3	4		5		6		7	1	2T½ Maj	2T½ Maj
Dorian	II	m7	1		2	♭3		4		5		6	♭7		1	2T½ Min	2T½ Min
Phrygian	III	m7	1	♭2		♭3		4		5	♭6		♭7		1	2T½ Phry	2T½ Phry
Lydian	IV	M7	1		2		3		♯4	5		6		7	1	3T Maj	2T½ Maj
Mixolydian	V	7	1		2		3	4		5		6	♭7		1	2T½ Maj	2T½ Min
Aeolian (<i>Natural minor scale</i>)	VI	m7	1		2	♭3		4		5	♭6		♭7		1	2T½ Min	2T½ Phry
Locrian	VII	m7♭5	1	♭2		♭3		4	♭5		♭6		♭7		1	2T½ Phry	3T Maj

I. Diatonic major scale - VI. Relative minor scale / Descending melodic minor scale

A2. Melodic major ♭2

Name	Degr.	Chord	Scale										Tetrachords				
Melodic major ♭2 (Ionian ♭2)	I	M7	1	♭2			3	4		5		6		7	1	2T½ Harm	2T½ Maj
Lydian ♭6	IV	M7	1		2		3		♯4	5	♭6			7	1	3T Maj	2T½ Harm
Mixolydian ♭5	V	7♭5	1		2		3	4	♭5			6	♭7		1	2T½ Maj	3T Aug1

A3. Melodic major ♭5

Name	Degr.	Chord	Scale										Tetrachords				
Melodic major ♭5 (Ionian ♭5)	I	M7♭5	1		2		3	4	♭5			6		7	1	2T½ Maj	3T Aug2
Lydian ♭2	IV	M7	1	♭2			3		♯4	5		6		7	1	3T Harm	2T½ Maj

A4. Melodic major ♭2 ♭5

Name	Degr.	Chord	Scale										Tetrachords				
Melodic major ♭2 ♭5	I	M7♭5	1	♭2			3	4	♭5			6		7	1	2T½ Harm	3T Aug2
Lydian ♭2 ♭6	IV	M7	1	♭2			3		♯4	5	♭6			7	1	3T Harm	2T½ Harm

I. Ionian ♭2 ♭5

16 Heptatonic scales / 56 modes

B. Harmonic major modes (14 modes)

B1. Harmonic major

Name	Degr.	Chord	Scale											Tetrachords			
Harmonic major (Ionian $\flat 6$)	I	M7	1		2		3	4		5	$\flat 6$			7	1	2T $\frac{1}{2}$ Maj	2T $\frac{1}{2}$ Harm
Dorian $\flat 5$	II	m7 $\flat 5$	1		2	$\flat 3$		4	$\flat 5$			6	$\flat 7$		1	2T $\frac{1}{2}$ Min	3T Aug1
Phrygian $\flat 4$	III	m7 (7)	1	$\flat 2$		$\flat 3$	$\flat 4$			5	$\flat 6$		$\flat 7$		1	2T Phry	2T $\frac{1}{2}$ Phry
Lydian $\flat 3$	IV	mM7	1		2	$\flat 3$			$\sharp 4$	5		6		7	1	3T Min	2T $\frac{1}{2}$ Maj
Mixolydian $\flat 2$	V	7	1	$\flat 2$			3	4		5		6	$\flat 7$		1	2T $\frac{1}{2}$ Harm	2T $\frac{1}{2}$ Min
Lydian $\sharp 2 \flat 5$ (Aug. Aeolian)	\flat VI	M7 $\sharp 5$	1			$\sharp 2$	3		$\sharp 4$		$\sharp 5$	6		7	1	3T Aug1	2T Phry
Locrian $\flat \flat 7$	VII	dim7	1	$\flat 2$		$\flat 3$		4	$\flat 5$		$\flat 6$	$\flat \flat 7$			1	2T $\frac{1}{2}$ Phry	3T Min

B2. Harmonic major $\flat 2$ (Byzantine mode)

Name	Degr.	Chord	Scale											Tetrachords			
Harmonic major $\flat 2$ (Ionian $\flat 2 \flat 6$)	I	M7	1	$\flat 2$			3	4		5	$\flat 6$			7	1	2T $\frac{1}{2}$ Harm	2T $\frac{1}{2}$ Harm
Lydian $\flat 3 \flat 6$	IV	mM7	1		2	$\flat 3$			$\sharp 4$	5	$\flat 6$			7	1	3T Min	2T $\frac{1}{2}$ Harm
Mixolydian $\flat 2 \flat 5$	V	7 $\flat 5$	1	$\flat 2$			3	4	$\flat 5$			6	$\flat 7$		1	2T $\frac{1}{2}$ Harm	3T Aug1

I. Byzantine scale / Double harmonic major - IV. Hungarian / Gypsy minor / Double harmonic minor - V. Oriental scale

B3. Harmonic major $\flat 5$

Name	Degr.	Chord	Scale											Tetrachords			
Harmonic major $\flat 5$ (Ionian $\flat 5 \flat 6$)	I	M7 $\flat 5$	1		2		3	4	$\flat 5$		6			7	1	2T $\frac{1}{2}$ Maj	3T Maj+
Lydian $\flat 2 \flat 3$	IV	mM7	1	$\flat 2$		$\flat 3$			$\sharp 4$	5		6		7	1	3T Phry	2T $\frac{1}{2}$ Maj

B4. Harmonic major $\flat 2 \flat 5$

Name	Degr.	Chord	Scale											Tetrachords			
Harmonic major $\flat 2 \flat 5$	I	M7 $\flat 5$	1	$\flat 2$			3	4	$\flat 5$		$\flat 6$			7	1	2T $\frac{1}{2}$ Harm	3T Maj+
Phrygian $\sharp 4 \flat 7$	IV	mM7	1	$\flat 2$		$\flat 3$			$\sharp 4$	5	$\flat 6$			7	1	3T Phry	2T $\frac{1}{2}$ Harm

I. Persian scale / Locrian $\flat 3 \flat 7$

16 Heptatonic scales / 56 modes

C. Melodic minor modes (14 modes)

C1. Melodic minor

Name	Degr.	Chord	Scale											Tetrachords			
Melodic minor (Ionian $\flat 3$ /Dorian $\natural 7$)	I	mM7	1		2	$\flat 3$		4		5		6		7	1	2T $\frac{1}{2}$ Min	2T $\frac{1}{2}$ Maj
Dorian $\flat 2$ (Phrygian $\flat 6$)	II	m7	1	$\flat 2$		$\flat 3$		4		5		6	$\flat 7$		1	2T $\frac{1}{2}$ Phry	2T $\frac{1}{2}$ Min
Lydian $\sharp 5$ (Aug. Phrygian)	\flat III	M7 $\sharp 5$	1		2		3		$\sharp 4$		$\sharp 5$	6		7	1	3T Maj	2T Phry
Lydian $\flat 7$ (Mixolydian $\sharp 4$)	IV	7	1		2		3		$\sharp 4$	5		6	$\flat 7$		1	3T Maj	2T $\frac{1}{2}$ Min
Mixolydian $\flat 6$ (Aeolian $\flat 3$)	V	7	1		2		3	4		5	$\flat 6$		$\flat 7$		1	2T $\frac{1}{2}$ Maj	2T $\frac{1}{2}$ Phry
Aeolian $\flat 5$ (Locrian $\natural 2$)	VI	m7 $\flat 5$	1		2	$\flat 3$		4	$\flat 5$		$\flat 6$		$\flat 7$		1	2T $\frac{1}{2}$ Min	3T Maj
Locrian $\flat 4$ (Dim. Ionian)	VII	m7 $\flat 5$	1	$\flat 2$		$\flat 3$	$\flat 4$		$\flat 5$		$\flat 6$		$\flat 7$		1	2T Phry	3T Maj

I. Ascending melodic minor scale - II. Cappadocian scale - IV. Acoustic scale / Bartok - VII. Altered Scale / Superlocrian

C2. Melodic minor $\flat 2$ (Neapolitan major mode)

Name	Degr.	Chord	Scale											Tetrachords			
Melodic minor $\flat 2$ (Ionian $\flat 2$ $\flat 3$)	I	mM7	1	$\flat 2$		$\flat 3$		4		5		6		7	1	2T $\frac{1}{2}$ Phry	2T $\frac{1}{2}$ Maj
Lydian $\flat 6$ $\flat 7$	IV	7	1		2		3		$\sharp 4$	5	$\flat 6$		$\flat 7$		1	3T Maj	2T $\frac{1}{2}$ Phry
Mixolydian $\flat 5$ $\flat 6$	V	7 $\flat 5$	1		2		3	4	$\flat 5$		$\flat 6$		$\flat 7$		1	2T $\frac{1}{2}$ Maj	3T Maj

I. Neapolitan major scale

C3. Melodic minor $\flat 5$

Name	Degr.	Chord	Scale											Tetrachords			
Melodic minor $\flat 5$ (Ionian $\flat 3$ $\flat 5$)	I	mM7 $\flat 5$	1		2	$\flat 3$		4	$\flat 5$			6		7	1	2T $\frac{1}{2}$ Min	3T Aug2
Mixolydian $\flat 2$ $\sharp 4$ (Lydian $\flat 2$ $\flat 7$)	IV	7	1	$\flat 2$			3		$\sharp 4$	5		6	$\flat 7$		1	3T Harm	2T $\frac{1}{2}$ Min

C4. Melodic minor $\flat 2$ $\flat 5$

Name	Degr.	Chord	Scale											Tetrachords			
Melodic minor $\flat 2$ $\flat 5$ (Locrian $\flat 6$ $\natural 7$)	I	mM7 $\flat 5$	1	$\flat 2$		$\flat 3$		4	$\flat 5$			6		7	1	2T $\frac{1}{2}$ Phry	3T Aug2
Phrygian $\flat 3$ $\sharp 4$	IV	7	1	$\flat 2$			3		$\sharp 4$	5	$\flat 6$		$\flat 7$		1	3T Harm	2T $\frac{1}{2}$ Phry

I. Persian scale

16 Heptatonic scales / 56 modes

D. Harmonic minor modes (14 modes)

D1. Harmonic minor

Name	Degr.	Chord	Scale										Tetrachords				
Harmonic minor (Aeolian $\flat 7$)	I	mM7	1		2	$\flat 3$		4		5	$\flat 6$			7	1	2T½ Min	2T½ Harm
Locrian $\flat 6$	II	m7 $\flat 5$	1	$\flat 2$		$\flat 3$		4	$\flat 5$			6	$\flat 7$		1	2T½ Phry	3T Aug1
Ionian $\sharp 5$	\flat III	M7 $\sharp 5$	1		2		3	4			$\sharp 5$	6		7	1	2T½ Maj	2T Phry
Dorian $\sharp 4$	IV	m7	1		2	$\flat 3$			$\sharp 4$	5		6	$\flat 7$		1	3T Min	2T½ Min
Phrygian $\flat 3$	V	7	1	$\flat 2$			3	4		5	$\flat 6$		$\flat 7$		1	2T½ Harm	2T½ Phry
Lydian $\sharp 2$	\flat VI	M7	1			$\sharp 2$	3		$\sharp 4$	5		6		7	1	3T Aug1	2T½ Maj
Locrian $\flat 4 \flat 7$ (Dim. Mixolydian)	VII	dim7	1	$\flat 2$		$\flat 3$	$\flat 4$		$\flat 5$		$\flat 6$	$\flat 7$			1	2T Phry	3T Min

I. Ionian $\flat 3 \flat 6$ - IV. Romanian scale - V. Phrygian dominant scale / Spanish Phrygian scale / Spanish Gypsy scale / Jewish scale

D2. Harmonic minor $\flat 2$ (Neapolitan minor mode)

Name	Degr.	Chord	Scale										Tetrachords				
Harmonic minor $\flat 2$ (Phrygian $\flat 7$)	I	mM7	1	$\flat 2$		$\flat 3$		4		5	$\flat 6$			7	1	2T½ Phry	2T½ Harm
Aeolian $\sharp 4$	IV	m7	1		2	$\flat 3$			$\sharp 4$	5	$\flat 6$		$\flat 7$		1	3T Min	2T½ Phry
Locrian $\flat 3$	V	7 $\flat 5$	1	$\flat 2$			3	4	$\flat 5$		$\flat 6$		$\flat 7$		1	2T½ Harm	3T Maj

I. Neapolitan minor scale - IV. Hungarian Gypsy scale

D3. Harmonic minor $\flat 5$

Name	Degr.	Chord	Scale										Tetrachords				
Harmonic minor $\flat 5$ (Aeolian $\flat 5 \flat 7$)	I	mM7 $\flat 5$	1		2	$\flat 3$		4	$\flat 5$		$\flat 6$			7	1	2T½ Min	3T Maj+
Dorian $\flat 2 \sharp 4$ (Phrygian $\sharp 4 \flat 6$)	IV	m7	1	$\flat 2$		$\flat 3$			$\sharp 4$	5		6	$\flat 7$		1	3T Phry	2T½ Min

D4. Harmonic minor $\flat 2 \flat 5$

Name	Degr.	Chord	Scale										Tetrachords				
Harmonic minor $\flat 2 \flat 5$ (Locrian $\flat 7$)	I	mM7 $\flat 5$	1	$\flat 2$		$\flat 3$		4	$\flat 5$		$\flat 6$			7	1	2T½ Phry	3T Maj+
Phrygian $\sharp 4$	IV	m7	1	$\flat 2$		$\flat 3$			$\sharp 4$	5	$\flat 6$		$\flat 7$		1	3T Phry	2T½ Phry

16 Heptatonic scales / 56 modes

Structure (1)

1	b2	2	#2 b3	3 b4	4	#4 b5	5	#5 b6	6 bb7	b7	7	1	Mode	Name	Tetrachords	
1	b2	-	b3	b4	-	b5	-	b6	bb7	-	-	1	D1 / VII	Locrian b4 bb7 (Dim. Mixolydian)	2T Phry	3T Min
1	b2	-	b3	b4	-	b5	-	b6	-	b7	-	1	C1 / VII	Locrian b4 (Dim. Ionian)	2T Phry	3T Maj
1	b2	-	b3	b4	-	-	5	b6	-	b7	-	1	B1 / III	Phrygian b4	2T Phry	2T½ Phry
1	b2	-	b3	-	4	b5	-	b6	bb7	-	-	1	B1 / VII	Locrian bb7	2T½ Phry	3T Min
1	b2	-	b3	-	4	b5	-	b6	-	b7	-	1	A1 / VII	Locrian	2T½ Phry	3T Maj
1	b2	-	b3	-	4	b5	-	b6	-	-	7	1	D4 / I	Harmonic minor b2 b5 (Locrian b7)	2T½ Phry	3T Maj+
1	b2	-	b3	-	4	b5	-	-	6	b7	-	1	D1 / II	Locrian b6	2T½ Phry	3T Aug1
1	b2	-	b3	-	4	b5	-	-	6	-	7	1	C4 / I	Melodic minor b2 b5 (Locrian b6 b7)	2T½ Phry	3T Aug2
1	b2	-	b3	-	4	-	5	b6	-	b7	-	1	A1 / III	Phrygian	2T½ Phry	2T½ Phry
1	b2	-	b3	-	4	-	5	b6	-	-	7	1	D2 / I	Harmonic minor b2 (Phrygian b7)	2T½ Phry	2T½ Harm
1	b2	-	b3	-	4	-	5	-	6	b7	-	1	C1 / II	Dorian b2 (Phrygian b6)	2T½ Phry	2T½ Min
1	b2	-	b3	-	4	-	5	-	6	-	7	1	C2 / I	Melodic minor b2 (Ionian b2 b3)	2T½ Phry	2T½ Maj
1	b2	-	b3	-	-	#4	5	b6	-	b7	-	1	D4 / IV	Phrygian #4	3T Phry	2T½ Phry
1	b2	-	b3	-	-	#4	5	b6	-	-	7	1	B4 / IV	Phrygian #4 b7	3T Phry	2T½ Harm
1	b2	-	b3	-	-	#4	5	-	6	b7	-	1	D3 / IV	Dorian b2 #4 (Phrygian #4 b6)	3T Phry	2T½ Min
1	b2	-	b3	-	-	#4	5	-	6	-	7	1	B3 / IV	Lydian b2 b3	3T Phry	2T½ Maj
1	b2	-	-	3	4	b5	-	b6	-	b7	-	1	D2 / V	Locrian b3	2T½ Harm	3T Maj
1	b2	-	-	3	4	b5	-	b6	-	-	7	1	B4 / I	Harmonic major b2 b5 (Locrian b3 b7)	2T½ Harm	3T Maj+
1	b2	-	-	3	4	b5	-	-	6	b7	-	1	B2 / V	Mixolydian b2 b5	2T½ Harm	3T Aug1
1	b2	-	-	3	4	b5	-	-	6	-	7	1	A4 / I	Melodic major b2 b5 (Ionian b2 b5)	2T½ Harm	3T Aug2
1	b2	-	-	3	4	-	5	b6	-	b7	-	1	D1 / V	Phrygian b3	2T½ Harm	2T½ Phry
1	b2	-	-	3	4	-	5	b6	-	-	7	1	B2 / I	Harmonic major b2 (Ionian b2 b6)	2T½ Harm	2T½ Harm
1	b2	-	-	3	4	-	5	-	6	b7	-	1	B1 / V	Myxolydian b2	2T½ Harm	2T½ Min
1	b2	-	-	3	-	#4	5	-	6	-	7	1	A2 / I	Melodic major b2 (Ionian b2)	2T½ Harm	2T½ Maj
1	b2	-	-	3	-	#4	5	b6	-	b7	-	1	C4 / IV	Phrygian b3 #4	3T Harm	2T½ Phry
1	b2	-	-	3	-	#4	5	b6	-	-	7	1	A4 / IV	Lydian b2 b6	3T Harm	2T½ Harm
1	b2	-	-	3	-	#4	5	-	6	b7	-	1	C3 / IV	Mixolydian b2 #4 (Lydian b2 b7)	3T Harm	2T½ Min
1	b2	-	-	3	-	#4	5	-	6	-	7	1	A3 / IV	Lydian b2	3T Harm	2T½ Maj

16 Heptatonic scales / 56 modes

Structure (2)

1	b2	2	#2 b3	3 b4	4	#4 b5	5	#5 b6	6 bb7	b7	7	1	Mode	Name	Tetrachords	
1	-	2	b3	-	4	b5	-	b6	-	b7	-	1	C1 / VI	Aeolian b5 (Locrian b2)	2T½ Min	3T Maj
1	-	2	b3	-	4	b5	-	b6	-	-	7	1	D3 / I	Harmonic minor b5 (Aeolian b5 b7)	2T½ Min	3T Maj+
1	-	2	b3	-	4	b5	-	-	6	b7	-	1	B1 / II	Dorian b5	2T½ Min	3T Aug1
1	-	2	b3	-	4	b5	-	-	6	-	7	1	C3 / I	Melodic minor b5 (Ionian b3 b5)	2T½ Min	3T Aug2
1	-	2	b3	-	4	-	5	b6	-	b7	-	1	A1 / VI	Aeolian	2T½ Min	2T½ Phry
1	-	2	b3	-	4	-	5	b6	-	-	7	1	D1 / I	Harmonic minor (Aeolian b7)	2T½ Min	2T½ Harm
1	-	2	b3	-	4	-	5	-	6	b7	-	1	A1 / II	Dorian	2T½ Min	2T½ Min
1	-	2	b3	-	4	-	5	-	6	-	7	1	C1 / I	Melodic minor (Ionian b3 / Dorian b7)	2T½ Min	2T½ Maj
1	-	2	b3	-	-	#4	5	b6	-	b7	-	1	D2 / IV	Aeolian #4	3T Min	2T½ Phry
1	-	2	b3	-	-	#4	5	b6	-	-	7	1	B2 / IV	Lydian b3 b6	3T Min	2T½ Harm
1	-	2	b3	-	-	#4	5	-	6	b7	-	1	D1 / IV	Dorian #4	3T Min	2T½ Min
1	-	2	b3	-	-	#4	5	-	6	-	7	1	B1 / IV	Lydian b3	3T Min	2T½ Maj
1	-	2	-	3	4	b5	-	b6	-	b7	-	1	C2 / V	Mixolydian b5 b6	2T½ Maj	3T Maj
1	-	2	-	3	4	b5	-	b6	-	-	7	1	B3 / I	Harmonic major b5 (Ionian b5 b6)	2T½ Maj	3T Maj+
1	-	2	-	3	4	b5	-	-	6	b7	-	1	A2 / V	Mixolydian b5	2T½ Maj	3T Aug1
1	-	2	-	3	4	b5	-	-	6	-	7	1	A3 / I	Melodic major b5 (Ionian b5)	2T½ Maj	3T Aug2
1	-	2	-	3	4	-	5	b6	-	b7	-	1	C1 / V	Mixolydian b6 (Aeolian b3)	2T½ Maj	2T½ Phry
1	-	2	-	3	4	-	5	-	6	b7	-	1	B1 / I	Harmonic major (Ionian b6)	2T½ Maj	2T½ Harm
1	-	2	-	3	4	-	5	-	6	-	7	1	A1 / V	Mixolydian	2T½ Maj	2T½ Min
1	-	2	-	3	4	-	5	-	6	-	7	1	A1 / I	Ionian	2T½ Maj	2T½ Maj
1	-	2	-	3	4	-	-	#5	6	-	7	1	D1 / bIII	Ionian #5	2T½ Maj	2T Phry
1	-	2	-	3	-	#4	5	b6	-	b7	-	1	C2 / IV	Lydian b6 b7	3T Maj	2T½ Phry
1	-	2	-	3	-	#4	5	b6	-	-	7	1	A2 / IV	Lydian b6	3T Maj	2T½ Harm
1	-	2	-	3	-	#4	5	-	6	b7	-	1	C1 / IV	Lydian b7 (Mixolydian #4)	3T Maj	2T½ Min
1	-	2	-	3	-	#4	5	-	6	-	7	1	A1 / IV	Lydian	3T Maj	2T½ Maj
1	-	2	-	3	-	#4	-	#5	6	-	7	1	C1 / bIII	Lydian #5 (Aug. Phrygian)	3T Maj	2T Phry
1	-	-	#2	3	-	#4	5	-	6	-	7	1	D1 / bVI	Lydian #2	3T Aug1	2T½ Maj
1	-	-	#2	3	-	#4	-	#5	6	-	7	1	B1 / bVI	Lydian #2 b5 (Aug. Aeolian)	3T Aug1	2T Phry