

SØRAV MUSIC ACADEMY

LEVEL 3 · MASTERING

GOLD STANDARD WORKBOOK

A practical, measurement-aware mastering course for Logic Pro. Learn to prepare a mix, evaluate tonal balance, control dynamics, interpret meters, check stereo compatibility and deliver reliable files.

Golden rule

Numbers verify technical requirements; listening judges the musical result. There is no universal loudness, peak, EQ or compression setting that is right for every song.

What Mastering Is—and Is Not

Learning target: Understand mastering as the final quality-control and delivery stage for an already-mixed stereo or approved stem deliverable.

Mastering follows mixing

Mixing shapes relationships among individual tracks. Mastering works on the approved mix as a whole, making final tonal, dynamic, sequencing and delivery decisions. It is not a reliable way to repair every balance or arrangement problem.

Start with the mix, not a loudness target

Confirm the correct mix version, intended format and clean export. If the vocal is buried or kick and bass conflict, return to the mix when possible rather than expecting mastering to isolate and fix the problem perfectly.

Critical listening and references

Use a familiar monitoring setup and relevant references at similar perceived loudness. Focus on overall tonal balance, dynamics, low-frequency control, stereo stability and how the song feels at normal and quiet levels.

Typical mastering moves

Possible tasks include subtle broad EQ, dynamic control, limiting, stereo compatibility checks, sequencing and delivery conversion. Not every track needs every process; sometimes the best decision is to leave a good mix alone.

Mastering is not a loudness contest

A louder file can seem more exciting in an uncontrolled comparison. Compare at matched loudness and decide whether the tonal and dynamic changes actually help. Streaming services may adjust playback loudness; a number alone does not determine quality.

Logic Pro practical

In Logic Pro, import the approved stereo mix into a dedicated mastering project. Confirm the file, start/end points and sample rate. Listen once without processing, write three observations, then compare a level-matched reference. Do not add a limiter until you know what problem you are solving.

Guided listening

Listen to the whole song at normal level, then quieter. Write whether the vocal, bass, transients and stereo image feel coherent. Identify problems that would be better fixed in the mix.

Common mistakes

Treating mastering as a repair button

- chasing loudness before tonal balance
- applying a standard chain to every song.

Completion task

Create a mastering brief describing the approved source, intended release format, three strengths, any remaining concerns and the delivery requirements.

Decision log

What did you hear? What did you measure? Was the comparison level-matched? What did the processing improve or harm? What file did you actually verify?

Preparing a Mix for Mastering

Learning target: Deliver a clean, clearly identified mix with appropriate headroom and no avoidable technical problems.

Choose the correct source

Use the approved full-resolution mix export, not a compressed preview downloaded from a social platform. Confirm that the file is the intended version and that no accidental limiter, clipping or export truncation occurred.

Headroom and peaks

Leave sensible peak margin so the mastering chain has room to work. There is no one mandatory peak value for every mix; avoid clipping and do not reduce quality by applying unnecessary processing solely to hit a number.

Check beginnings, endings and tails

Listen for clicks, missing reverb tails, abrupt fades, extra silence and unintended count-ins. Confirm the song starts and ends as intended and that the full tail is included.

Organise files and notes

Use clear names, date/version labels and a short note about sample rate, bit depth, mix revision and any special requirements. If alternate mixes or stems are requested, label them unambiguously and ensure they align in time.

When to request a revision

If there is an audible mix problem—buried vocal, harsh instrument, uneven bass or unwanted effect—make a revision at the mix stage when possible. Mastering tools affect the whole mix and cannot always separate overlapping sources.

Logic Pro practical

Export the approved Logic Pro mix to a clearly named, uncompressed PCM file at the agreed project/delivery format. Re-import the export into a blank session and listen from beginning to end. Verify the first transient, ending tail, stereo channels and file metadata.

Guided listening

Compare the export with the session playback at matched level. Listen especially to the first second, transitions, final phrase and effect tail.

Common mistakes

Sending a low-quality preview

- failing to check the actual export
- using ambiguous file names
- normalising or limiting just to hit an arbitrary peak.

Completion task

Prepare a delivery folder with the approved mix, a version note, technical format information and a checklist showing the exported file was auditioned.

Decision log

What did you hear? What did you measure? Was the comparison level-matched? What did the processing improve or harm? What file did you actually verify?

Tonal Balance and Reference Listening

Learning target: Make broad tonal decisions using level-matched references and the whole song rather than isolated meter targets.

What tonal balance means

Tonal balance is the relationship between low, mid and high-frequency energy across the musical picture. It is not a flat line on an analyser. Genre, arrangement, instrumentation and artistic intent affect the appropriate balance.

Choose a useful reference

Choose one or two released tracks with a similar style, instrumentation and energy. Use a reliable local file where possible. Match perceived loudness before comparing; louder playback can create a false impression of punch, clarity or bass.

Compare by category

Listen separately for low-end extension and control, low-mid density, vocal presence, upper-mid comfort, high-frequency air and stereo stability. Make one observation at a time and return to the full song after each check.

Broad versus narrow correction

Mastering EQ often uses subtle, broad changes to the overall tonal picture. A narrow resonance may sometimes need attention, but a persistent instrument-specific problem is often better corrected in the mix.

Use analyzers carefully

Spectrum displays can help compare broad energy patterns, but readings depend on windowing, averaging, level and source material. Do not copy a reference curve or boost a band merely because the graph looks different.

Logic Pro practical

In Logic Pro, place a reference track on a separate channel that bypasses your processing chain. Level-match it carefully. Compare short, representative sections and note only two or three differences before making a small broad EQ test.

Guided listening

Switch between your mix and reference at matched perceived loudness. Ask whether the change improves the song rather than making it merely more similar to the reference.

Common mistakes

Using an unrelated reference

- comparing at different loudness
- trying to make every genre's spectrum identical
- excessive broad boosts or cuts.

Completion task

Write a reference comparison with three observations, one change tested, and a reason for keeping or undoing it.

Decision log

What did you hear? What did you measure? Was the comparison level-matched? What did the processing improve or harm? What file did you actually verify?

Dynamics, Compression and Limiting

Learning target: Understand how mastering dynamics processing changes overall movement, peaks and loudness—and when not to use it.

Dynamics across the whole mix

Mastering compression affects the combined mix, so a change intended for one element also affects everything else. Small moves can alter cohesion; too much can flatten transients, pull up ambience or make the mix pump.

Threshold and ratio in context

Threshold determines when compression begins, and ratio influences how strongly levels above threshold are reduced. Attack and release affect how transients and recovery behave. Mastering often calls for restrained settings because many elements are being processed together.

Compression versus limiting

A limiter is a form of dynamics processor designed to constrain peaks more firmly. It can increase average level by reducing peaks, but excessive limiting can cause distortion, reduced punch, harshness or fatigue.

Gain reduction is not a goal

Meters show what the processor is doing, not whether the music improved. Listen for kick impact, vocal movement, cymbal texture, bass definition and the sense of groove. There is no universal amount of gain reduction that is right for every song.

Loudness and trade-offs

Increasing loudness often trades some peak dynamics for average level. Decide what the song needs: an intimate dynamic presentation may benefit from restraint, while a dense electronic track may tolerate a different approach. Compare at matched loudness.

Logic Pro practical

Use a copy of the approved mix in Logic Pro. Add a compressor with gentle settings, then a limiter only if needed. Toggle the chain and match output loudness. Listen to transients, vocal expression, cymbals and low end. Remove processing that creates audible damage.

Guided listening

Compare the unprocessed and processed versions at matched loudness. Listen for changes in punch, groove, distortion, ambience and emotional impact—not just meter movement.

Common mistakes

Using limiting to repair a bad mix

- excessive gain reduction
- judging the louder version as better
- assuming every track needs master compression.

Completion task

Document why you used or skipped dynamics processing and note the audible trade-off you accepted.

Decision log

What did you hear? What did you measure? Was the comparison level-matched? What did the processing improve or harm? What file did you actually verify?

Peak, RMS and LUFS

Learning target: Distinguish sample peak, true peak, RMS and integrated loudness, and use each measurement for the right question.

Sample peak and dBFS

Sample peak measures the highest stored sample value relative to digital full scale. 0 dBFS is the digital ceiling. A sample-peak meter does not always predict the highest reconstructed waveform peak.

True peak

True-peak measurement estimates inter-sample peaks that can occur during digital-to-analogue reconstruction or conversion. A file with safe sample peaks can produce a higher reconstructed peak, so true-peak metering is useful when delivery specifications call for it.

RMS

RMS is an average-energy measurement over a defined window. It can help describe signal energy, but it is not identical to perceived loudness and may react differently to different spectral content.

LUFS and time integration

LUFS uses a loudness model intended to better reflect perceived programme loudness. Integrated loudness measures over a programme; short-term and momentary values describe shorter windows. These measurements answer different questions.

Measure in context

Metering helps verify technical requirements and compare versions, but it cannot decide whether a mix feels balanced or compelling. Check the measurement settings, meter type and the exact file being measured.

Logic Pro practical

In Logic Pro, use available loudness/level meters or a trusted meter plugin to observe sample peak and loudness during playback. If your tool offers true-peak measurement, note it separately. Measure the exported file, not only the session bus.

Guided listening

Compare two sections with different density. Observe how peak and integrated loudness tell different stories. Do not change processing solely to make the numbers match a reference.

Common mistakes

Calling RMS and LUFS the same thing

- treating sample peak as true peak
- assuming one number determines quality
- measuring a different file than the one delivered.

Completion task

Create a measurement report that names the file, sample peak, true peak if available, integrated loudness if available and the meter used.

Decision log

What did you hear? What did you measure? Was the comparison level-matched? What did the processing improve or harm? What file did you actually verify?

True Peak, Clipping and Codec Safety

Learning target: Understand inter-sample peaks, clipping risks and why lossy encoding should be checked after conversion.

Where clipping occurs

Clipping occurs when a signal exceeds a stage's representable range or a processor's internal limits. Distortion may occur in the source, plugin, bus, output or later conversion stage. Lowering the final fader cannot undo clipping already printed into a file.

Inter-sample peaks

Digital samples describe points in a waveform; the reconstructed curve between them can exceed the sample values. True-peak meters estimate this behaviour. This matters for conversion and delivery systems, especially when a file is encoded to a lossy format.

Lossy encoding can change peaks

MP3/AAC-style encoding changes the signal representation and may create new peak behaviour. A file that appears safe before encoding can behave differently after encoding and decoding. When specifications are strict, check the encoded result with a suitable meter.

Avoid overprocessing as a safety strategy

Leaving sensible margin and checking true peak is more reliable than relying on a limiter to solve every issue. Do not confuse peak safety with loudness; a file can have safe peaks and still be very loud or very quiet.

Listen for artefacts

Metering is not enough. Listen for distortion, crackle, harshness, transient damage and unexpected changes after export. If a problem appears only after encoding, compare the original and encoded-decoded files at matched loudness.

Logic Pro practical

Export a short test from Logic Pro, then create the required delivery format. If a lossy format is part of the delivery, audition the encoded file and use true-peak metering if available. Keep the original high-quality master file.

Guided listening

Listen to a transient-heavy passage and cymbals before and after encoding. Compare at matched loudness and note any real audible differences; do not assume every encode will sound damaged.

Common mistakes

Assuming sample peak equals true peak

- relying on a limiter without checking
- delivering only a lossy file when a high-quality master is required
- ignoring the exported file.

Completion task

Build a technical safety checklist that names the source master, encoded formats, peak measurements and listening checks.

Decision log

What did you hear? What did you measure? Was the comparison level-matched? What did the processing improve or harm? What file did you actually verify?

Stereo and Mono Compatibility

Learning target: Check stereo image, correlation and low-frequency stability without widening the mix just for effect.

Stereo image and balance

Stereo presentation depends on level differences, timing differences and the recorded or processed content in left and right channels. A stable image helps listeners locate the main elements, but width is not automatically quality.

Mono compatibility

When left and right channels are summed, some differences may reinforce and others may cancel. Wide delays, chorus, stereo reverbs and multi-mic recordings can change substantially in mono. Important musical elements should remain sufficiently clear.

Correlation meters

A correlation meter can indicate similarity between left and right channels. Strong negative correlation can warn of potential mono cancellation, but the meter does not fully describe perception or every playback situation. Listen as well as measure.

Low-frequency stability

Bass and kick often benefit from a stable centre, but this is an artistic choice rather than an absolute rule. Wide low-frequency effects can make the bottom end feel unstable or reduce consistency across playback systems.

Width processing trade-offs

Stereo widening can alter phase and level relationships. Use it only when it helps the song and check bypass at matched loudness, mono playback and the full arrangement.

Logic Pro practical

In Logic Pro, listen to the stereo mix and then use a mono check or utility to sum to mono. If available, observe a correlation meter. Compare before and after any widening process and check the centre vocal, kick and bass.

Guided listening

Listen to the chorus in stereo and mono. Identify elements that become quieter, hollow or hard to locate. Try reducing or removing the process causing the issue.

Common mistakes

Widening every track

- treating a correlation number as an absolute pass/fail
- ignoring mono
- placing essential low-end content too widely without listening.

Completion task

Record stereo and mono observations and state whether each key element remains clear enough for the song.

Decision log

What did you hear? What did you measure? Was the comparison level-matched? What did the processing improve or harm? What file did you actually verify?

Delivery Formats and Quality Control

Learning target: Prepare the correct files, verify technical settings, and perform a final quality-control pass before delivery.

Know the delivery brief

Confirm file format, sample rate, bit depth, channel count, start/end points, naming convention and any loudness or true-peak requirement. Requirements vary by distributor, client, broadcast or video workflow; do not assume one setting fits every destination.

Lossless master and derivatives

A high-quality PCM WAV or AIFF master is commonly requested for music delivery. MP3 or AAC may be useful for previews or specific workflows, but lossy derivatives should not replace a requested high-quality master. Keep a clean source for future conversions.

File naming and versions

Use clear artist/title/version labels and avoid ambiguous names such as final-final-new. Document whether a file is an instrumental, clean version, alternate mix, or master revision. Keep exports organised and retain the approved session and source assets.

Quality-control listening

Listen to the actual exported file from beginning to end. Check the first transient, fades, effect tails, edits, clicks, channel balance, mono compatibility and any conversion artefacts. A successful export dialog does not guarantee a correct deliverable.

Archive and handoff

Keep the approved mix, final master, required derivatives, notes and project assets in a clear folder structure. Verify the files can be opened and back them up according to the project's needs.

Logic Pro practical

Create a delivery folder from a Logic Pro project. Export the required lossless master and any requested derivatives, inspect file settings, re-import the master and listen end-to-end. Make a short manifest listing each file and purpose.

Guided listening

Listen to the first and last seconds, quiet sections, transitions and loudest section. Compare the exported file with the session at matched level.

Common mistakes

Guessing the delivery specification

- exporting the wrong version
- failing to listen to the actual export
- using unclear filenames
- forgetting required alternates.

Completion task

Deliver a folder with named files, a format manifest, a QC checklist and a version note.

Decision log

What did you hear? What did you measure? Was the comparison level-matched? What did the processing improve or harm? What file did you actually verify?

Level 3 final readiness checklist

- I can distinguish mixing from mastering.
- I can prepare and verify a clean approved mix.
- I can compare tonal balance with a relevant level-matched reference.
- I understand compression and limiting trade-offs.
- I can distinguish sample peak, true peak, RMS and LUFS.
- I can check inter-sample peak and encoded-file safety where required.
- I can check stereo and mono compatibility.
- I can export, audition, name and archive delivery files.