



Duration:	12 weeks
Course:	Advanced Synthesis
Instructor:	Don Garbutt

Course Objective: Students will engage in the study of multiple forms of sound synthesis in order to develop a sound design skill set. While current software instruments have thousands of presets available, flipping through presets can quickly lead to auditory fatigue and generic results. This course highlights common synthesis modules and terminology for musicians to easily personalize their sounds and clarifies the distinct benefits of each specific synthesis category, including Subtractive, Additive, Wavetable, Sampling, Granular, Resynthesis, FM, Spectral, Modal and hybrid combinations.

Bio: Multiple award-winning synth guru/producer Don Garbutt's musical life began as a multi-instrumentalist, studying conservatory music theory and performing on bassoon, keyboards and stringed instruments. His life changed when he heard "Switched-On Bach" by Wendy Carlos, developing an international reputation as a synthesist, composer, collaborator, sound designer and producer. With a diverse portfolio visible on www.dongarbutt.com, www.youtube.com/dongarbutt and www.soundcloud.com/dongarbutt, he has created a unique genre of music called Science Music. He has contributed skills to projects with Pink Floyd, Barenaked Ladies, Esthero, Discovery and History Channel and was a researcher at IRCAM, Paris. He is a valued sound designer, beta tester and preset contributor to major software synthesizer makers including Native Instruments, Sugar Bytes and XILS-Lab, and has invented several unique synthesizer devices including Spektrumsynth and the Animator Series.

Week	Topic
1	Intro to Synthesis Types: common parameters, technical approaches, recommended devices
2	Subtractive (virtual analog): Reaktor, Retrosynth, Arp 2600, Moog Model V, Alchemy
3	Wavetable: Serum, NI Massive, Spektrumsynth, Retrosynth, Reaktor
4	Wavetable II: custom tables, waveform transformation including FM, Ring Mod, Warp
5	Sampling: Kontakt, EXS-24, Reaktor, Alchemy
6	Sampling II: tempo matching, modular synthesizer elements, libraries
7	Additive: Serum, Spektrumsynth, Animator for Razor, Alchemy, Absynth
8	FM: FM8, Retrosynth, Spektrumsynth, Serum
9	Granular: Time Drops, Spektrumsynth, Grainstates, Alchemy
10	Modal: Animator for Prism, Reaktor, band-pass filters and excitors
11	Spectral: Alchemy
12	Course Review

Evaluation:

Assignment	20%
Examination	65%
Attendance / Participation	15%
Total	100%