

The ICE Age – Information and Communications Engineering as an Art, Science, and Pervasive Culture

New **history of science** course at TU Graz

Information and Communications Engineering (ICE) as a field of science is the foundation of today's knowledge society. It spans a long history from early drum and fire communication over the Gutenberg Letterpress to the modern mobile Internet. The overwhelming experience with ICE devices and services in our daily lives often blurs the boundaries between fundamental science, the art of engineering in practical designs, and its impact on our culture in a much broader sense.

Claude Elwood Shannon Centenary

C.E. Shannon is the father of information theory and, in the context of the 100th anniversary of his birth on 30 April 1916, the IEEE Information Theory Society supports public events around the globe, see www.itsoc.org/resources/Shannon-Centenary. TU Graz will host one of them for which students of the *ICE Age* course will join forces in its design and preparation while earning credits towards their final grade.

Course Content

1. The knowledge tetrahedron and the art of engineering 2. The Engineering and Technology History Wiki 3. Patents, privacy, and antipiracy: From Gyro Gearloose to No Such Agency 4. Mechanical turks: From Wolfgang von Kempelen to amazon and beyond 5. Local history: From Nikola Tesla to BigChaos 6. The history of the Fast Fourier Transform: From Carl Friedrich Gauß to WLAN 7. Mission communications: The rise and fall of Bell Laboratories 8. The archives of the Charles Babbage Institute: Oral history 9. Diversity in science: From Ada Lovelace to James Edward West 10. From Moore's Law to More than Moore: A showdown of quantitative history and personal history 11. The mobile comms chronicles: An exercise in contemporary history 12. Pervasive culture: From Johannes Gutenberg to facebook

Course Instructor



Prof. Gernot Kubin has been an ICE researcher, teacher, and science manager since 1982, at universities in Vienna, Stockholm, Graz, San Diego, Berkeley, Danang, and Munich, at industrial labs such as Philips Research Eindhoven, AT&T Bell Labs Murray Hill, Global IP Sound Stockholm & San Francisco, and at the public research organizations CERN Geneva and FTW Vienna. Currently he heads the Signal Processing and Speech Communication Lab, coordinates the ICE doctoral school, and chairs the Senate of TU Graz.

Further Information

- Course 442.008, 2.0 VU (lecture with practical), fully taught in English
- Time: Tuesday 16:00-18:00 hrs, starting Oct 6, 2015
- Location: Seminar room CGV, 8010 Graz, Inffeldgasse 16c, 2nd floor, room ID02104
- Websites: www.spssc.tugraz.at and online.tugraz.at/tug_online/lv.detail?clvnr=192633&sprache=2
- Email: gernot.kubin@tugraz.at