

# MUMT 203 - Introduction to digital audio, Winter 2008

Assignment/Essay #1 [20% of final mark]

Deadline: March 3rd, 2008, 5pm (please note late submission policy online)

## 1 Description:

You are requested to prepare a written essay (6 to 10 pages) on the topic:

*Evolution of Audio Solutions for Consumer Applications: From Vinyl to DVD Audio and portable music players. The document must contain an overview of the evolution of tools and a comparison of the technical characteristics of the different tools (use tables for comparisons). Ensure that you differentiate between electronic hardware/mechanical devices, storage media, encoding schemes, and algorithms. Please submit a typed paper, 12pt font, single spaced.*

## 2 Specifically, it should address:

### 2.1 A review

of the initial developments on digital audio for consumer applications and the advantages/disadvantages over the traditional analogue media previously available (vinyl and compact cassette). Include comments on maximum distortion levels, dynamic range, other non-idealities of analogue and early digital technology.

### 2.2 A comparison

of the different developments in digital audio, including specific details (system level) on implementations (for example CD, DAT, DCC (Digital Compact Cassette), MiniDisc, SACD, DVD Audio, portable music players, and home music systems. Details should include performance of the different systems (sampling rate, word length, etc.), storage capacity, compression schemes, etc. but also mechanical differences (e.g. rotary versus stationary heads, etc.).

### 2.3 Personal comments

on why some of the above formats have succeeded and some have disappeared, and which is likely to be the format for the next 5 years.

### 2.4 General conclusions and bibliography

## References

[Note] General References (please also use others, limit the use of websites, especially those of dubious merit. Be wary marketing material and audiophile pseudo-science.):

- [1] - Pohlmann, K. C. 2005. Principles of Digital Audio. 5th Edition. McGraw-Hill.
- [2] - Watkinson, J. 2001. The Art of Digital Audio. 3rd Edition. Focal Press.
- [3] - Ballora, M. 2003. Essentials of Music Technology. Prentice-Hall.
- [4] - Pohlmann, K. C. 1992. The Compact Disc Handbook. 2nd Edition. A/R Editions.