Video lectures in DAT105 are available from youtube from the following links:

**Optional Lecture 1**

* [Instruction Set Architectures (ISAs) and their components](https://youtu.be/3lcmaE45ZYw)
* [ISAs – Addressing modes and Instruction format](https://youtu.be/-QvT9ej-LjE)
* [Basic pipelining concepts](https://youtu.be/KFGNRrZ7gmI)

**Optional Lecture 2**

* [The Locality Principle](https://youtu.be/UtjxBaYr6N0)
* [A Simple Cache Design](https://youtu.be/w3rzk2UsspU)
* [Set-Associative Caches](https://youtu.be/7gssHoHIv5o)
* [Replacement Policies and Write Policies](https://youtu.be/FmgWzXJ5EgE)
* [Cache Performance](https://youtu.be/VuPOcARtdV0)

**Lecture 1**

* [Introduction by Per Stenström](https://youtu.be/eXG9dgpKNOM)
* [Why computer architecture is an important subject](https://youtu.be/unx6hgKEtIc)
* [Computer architecture fundamentals: Concepts and technology trends](https://youtu.be/4LKYo6Ak1U0)
* [How to assess the performance of computer systems](https://www.youtube.com/watch?v=6lHN4Jhq-lQ)

**Lecture 2**

* [Introduction by Per Stenström](https://youtu.be/_OYCXSkei0w)
* [Out-of-order completion pipelines](https://youtu.be/yY27bPmrOh8)
* [Super-pipelining and superscalar pipelines](https://youtu.be/czxL8WmmMCQ)
* [Global static instruction scheduling techniques](https://youtu.be/Uqn-Tv23zOk)

**Lecture 3**

* [Dynamic instruction scheduling](https://youtu.be/twz_mHhsfL0)
* [Tomasulo algorithm](https://youtu.be/Yl4ClKp2ihg)
* [Dynamic branch prediction](https://youtu.be/bVscI-hbvWY)

**Lecture 4**

* [Two-level branch prediction](https://youtu.be/MwA_zq8MhBs)
* [Hardware-supported speculation](https://youtu.be/nCGUvSqxB5g)
* [Memory disambiguation](https://youtu.be/1k3jsnWuYSU)
* [Register renaming](https://youtu.be/FzY8W8WuPIg)

**Lecture 5**

* [Cache miss classification](https://youtu.be/XAVSvyjlqwU)
* [Cache performance and the inclusion property](https://youtu.be/K_TNhodOFTY)
* [Lockup-free caches and cache prefetching](https://youtu.be/rVZzb1Rn2tE)
* [Virtual memory](https://youtu.be/3R6MwXj722w)

**Lecture 6**

* [Multithreading](https://youtu.be/7eilkI5krOg)
* [Multiprocessor/Multicore organizations](https://youtu.be/38Zfhuee8Ro)
* [Cache coherence solutions](https://youtu.be/woJcLahnb4A)

**Lecture 7**

* [Very Large Instruction Word (VLIW) Architectures and loop unrolling](https://youtu.be/0VyubGF2rik)
* [VLIW and software pipelining](https://youtu.be/ROn8IGX5alA)
* [VLIW and trace scheduling and predicated execution](https://youtu.be/GTxQ61ks0Fk)

**Flipped Classroom lectures**

* [Lecture 2](https://youtu.be/jCLB75mifSo)
* [Lecture 3](https://youtu.be/UmxRAamIei8)