**COURSE SYLLABUS**  
**BASIC**  
Day 1

* Session 01 - Notion of parallel Computing with GPUs, From GPUs to GPGPUs [60 min]
* Session 02 – CUDA Architecture [60 min]
* Session 03 – Getting your system ready with CUDA [30 min] [Hands-on]
* Session 04 – Programming GPUs with CUDA C [60 min]
* Session 06 – CUDA C Hands-on:: First Exercise on filling the blanks in already written CUDA code, Second Exercise writing a basic complete code in CUDA [e.g. Matrix Addition/Multiplication] [150 min] [Hands-on]

Day 2

* Session 01 - OpenACC Standard: Programming GPUs with Directives. [60 min]
* Session 02 – Hands-on using PGI Accelerator [60 min] [Hands-on]
* Session 03 – CUDA enabled Libraries, Trying out calling BLAS routines using CUBLAS [60 min] [Hands-on]
* Session 04 - Knowing about Tools: Visual Profiler, Parallel Nsight, cuda-gdb, try all tools on code written by you. [120 min][Hands-on]
* Session 05 – Kepler Architecture and comparison with Fermi [60 min]
* Examination - Basic Level [30 min]

**ADVANCED**  
Day 3

* Session 01- CUDA 5 – All you need to know about CUDA 5 [60 min]
* Session 02 – Optimize your CUDA code: Understanding Memory hierarchy and its impact on performance on your code. Covers Global memory, Shared memory, L1 and L2 Cache [120 min]
* Session 03 – Hands-on in optimization your code [90 min] [Hands-on]
* Session 04 – Multi-GPU Programming [30 min]
* Session 05 – NVIDIA updates/openHouse/Apps discussion [90 mins]
* Examination – Advanced Level [30 min]