Week 1 Schedule & Topics

JULY 12	JULY 13	JULY 14	JULY 15	JULY 16
Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**

JULY 12 — Monday

8 pm IST
10:30 AM EDT
Global Summer School
Welcome & Kickoff

9 pm IST
11:30 AM EDT
Lecture 1.1: Vector Spaces,
Tensor Products, and Qubits
Speaker: Elisa Bäumer

11:30 pm IST
2:00 PM EDT
Lecture 1.2: Introduction to
Quantum Circuits
Speaker: Elisa Bäumer

JULY 13 — Tuesday

5:30 pm IST
8:00 AM EDT
Lecture 2.1: Simple
Quantum Algorithms I
Speaker: Elisa Bäumer

11:30 pm IST
2:00 PM EDT
Lecture 2.2: Simple
Quantum Algorithms II
Speaker: Elisa Bäumer

JULY 14 — Wednesday

5:30 pm IST
8:00 AM EDT
Lecture 3.1: Noise in
Quantum Computers pt 1
Speaker: Zlatko Minev

9 PM IST
11:30 AM EDT
Lecture 3.1: Noise in
Quantum Computers pt. 2
Speaker: Zlatko Minev

11:30 PM IST
2:00 PM EDT
Lab 1: Introduction to
Quantum Computing
Algorithms and Operations
Speaker: Elisa Bäumer

JULY 15 — Thursday

5:30 PM IST
8:00 AM EDT
Lecture 4.1: Introduction to
Classical Machine Learning
Speaker: Amira Abbas

11:30 PM IST
2:00 PM EDT
Lecture 4.2: Advanced
Classical Machine Learning
Speaker: Amira Abbas

JULY 16 — Friday

5:30 PM IST
8:00 AM EDT
Lecture 5.1: Building a
Quantum Classifier
Speaker: Amira Abbas

9 PM IST
11:30 AM EDT
Lecture 5.2: Introduction to the
Quantum Approximate Optimization
Algorithm and Applications
Speaker: Johannes Weidenfeller

11:30 PM IST
2:00 PM EDT
Lab 2: Introduction to
Variational Algorithms
Speaker: Johannes Weidenfeller

Week 2 Schedule & Topics

JULY 19
Monday

5:30 PM IST
8:00 AM EDT
Lecture 6.1: From Variational Classifiers to Linear Classifiers
Speaker: Bryce Fuller

11:30 PM IST
2:00 PM EDT
Lecture 6.2: Quantum Feature Spaces and Kernels
Speaker: Kristan Temme

Live Q&A

Following each lecture there will be a live Q&A session with the speakers on screen in Crowdcast. For questions not answered during the lecture live stream, they will be answered there.

Important Note: There are NOT Live Q&A sessions for Labs

JULY 20
Tuesday

5:30 PM IST
8:00 AM EDT
Lecture 7.1: Quantum Kernels in Practice
Speaker: Jen Glick

11:30 PM IST
2:00 PM EDT
Lab 3: Introduction to Quantum Kernels and Support Vector Machines
Speaker: Anna Phan

JULY 21
Wednesday

5:30 PM IST
8:00 AM EDT
Lecture 8.1: Introduction and Applications of Quantum Models
Speaker: Francesco Tacchino

9 PM IST
11:30 AM EDT
Lecture 8.2: Barren Plateaus, Trainability Issues, and How to Avoid Them
Speaker: Francesco Tacchino

11:30 PM IST
2:00 PM EDT
Lab 4: Introduction to Training Quantum Circuits
Speaker: Julien Gacon

JULY 22
Thursday

5:30 PM IST
8:00 AM EDT
Lecture 9.1: Introduction to Quantum Hardware
Speaker: Nate Earnest-Noble

9 PM IST
11:30 AM EDT
Lecture 9.2: Hardware Efficient Ansatze for Quantum Machine Learning
Speaker: Nate Earnest-Noble

11:30 PM IST
2:00 PM EDT
Lab 5: Introduction to Hardware Efficient Ansatze for Quantum Machine Learning
Speaker: Nate Earnest-Noble

JULY 23
Friday

5:30 PM IST
8:00 AM EDT
Lecture 10.1: Advanced QML Algorithms: Quantum Boltzmann Machines and Quantum Generative Adversarial Networks
Speaker: Christa Zoufal

9 PM IST
11:30 AM EDT
Lecture 10.2: The Capacity and Power of Quantum Machine Learning Models & the Future of Quantum Machine Learning
Speaker: Amira Abbas

11:30 PM IST
2:00 PM EDT
Qiskit Global Summer School Commencement & Celebration