The TECHNICAL QUALIFYING EVALUATION (TQE): Instructions

Department of Electrical Engineering and Computer Science

Academic Year 2021-2022

New graduate students are expected to submit their TQE plan by February 1st, 2022.

To satisfy the TQE requirement, you must take four subjects from the grid found below. Two subjects must be selected from a single Group. The other two subjects must be selected from two other Groups. The approved TQE grid is found below with the subject titles and term offerings listed on the back.

TQE plans may be submitted online at: http://www.eecs.mit.edu/EECSgradrequirements.

Once you enter your TQE plan into the website, your graduate counselor will approve your submission online or offer other suggestions. Once agreed upon by you and your graduate counselor, your TQE plan will be recorded by the Graduate Office. If you later need to make changes to your submitted TQE plan, please see Janet Fischer in the EECS Graduate Office.

Group 1: Systems in CS	**Group 2: Theoretical CS**	**Group 3: Artificial Intelligence**
6.375, [6.820 xor 6.822], 6.823, 6.824, 6.825, 6.829, 6.830, 6.836, 6.858	6.840*, 6.841*, 6.850, 6.852, 6.854*, 6.856, 6.875 (*see notes below)	[6.345 xor 6.863 xor 6.864], [6.866 xor 6.869], [6.437 xor 6.438 xor 6.867], [6.832 xor 6.843], 6.838, 6.839*, 6.871 [6.874 xor 6.878], 6.884 (*see notes below)
Group 4: System Science and Control Engineering	**Group 5: Circuits and Electronic Systems**	**Group 6: Information Science and Communication**
[6.231 xor 6.241], [6.251 xor 6.255], [6.341 xor 6.344 xor 6.555]	6.334, 6.336, 6.374, 6.775 (Any 1 or 2 subjects allowed)	6.262, 6.267, 6.436, [6.437 xor 6.438], 6.441, 6.450
Group 7: Bioelectrical Engineering	**Group 8: Electromagnetics**	**Group 9: Physical Science and Engineering**
6.521, 6.522, 6.556 (Any 1 or 2 subjects allowed)	6.630, 6.631, 6.634 [6.640 xor 6.685], 6.561	6.720, 6.728, 6.730 (Any 1 or 2 subjects allowed)

Notes:
* 6.840 or 6.854 are recommended for students who plan to take only one subject in Group 2.
* For students with a strong background in the area, 6.841 may be substituted for 6.840- submit dept petition.
* 6.839 can be used as the second AI subject, but not the only subject.

IMPORTANT: CHECK ONLINE at http://student.mit.edu/catalog/m6a.html Fall Spring

NOT offered academic year 2021-2022
NOT offered academic year 2022-2023

Group 1: Systems in Computer Science

Spring	**6.375**	**Complex Digital Systems Design**
Fall	**6.820**	**Foundations of Program Analysis**
Spring	6.822	Formal Reasoning about Programs
Fall	6.823	Computer System Architecture
Spring	6.824	Distributed Computer Systems Engineering
Spring	6.825	Hardware Architecture for Deep Learning
Fall	6.829	Computer Networks
Spring	6.830	Database Systems
Fall	**6.836**	**Multicore Programming**
Spring	6.858	Computer Systems Security

Group 2: Theoretical Computer Science

Fall	6.840	Theory of Computation
Spring	**6.841**	**Advanced Complexity Theory**
Spring	6.850	Geometric Computing
Fall	**6.852**	**Distributed Algorithms**
Fall	6.854	Advanced Algorithms
Spring	**6.856**	**Randomized Algorithms**
Fall	6.875	Cryptography and Cryptanalysis

Group 3: Artificial Intelligence

Spring	**6.345**	**Spoken Language Processing**
Spring	6.437	Inference and Information
Fall	6.438	Algorithms for Inference
Spring	6.832	Underactuated Robotics
Spring	6.838	Shape Analysis
Fall	6.839	Advanced Computer Graphics
Fall	6.843	Robotic Manipulation
Spring	6.863	Natural Language and the Computer Representation of Knowledge
Fall	6.864	Advanced Natural Language Processing
Fall	**6.866**	**Machine Vision**
Fall	6.867	Machine Learning
Spring	6.869	Advances in Computer Vision
Spring	6.871	Machine Learning for Healthcare
Spring	6.874	Computational Systems Biology: Deep Learning in the Life Sciences
Fall	6.878	Advanced Computational Biology: Genomes, Networks, Evolution
Spring	6.884	Sensorimotor Learning

Group 4: System Science and Control Engineering

Spring	6.231	Dynamic Programming and Reinforcement Learning
Spring	6.241	Dynamic Systems and Control
Fall	6.251	Introduction to Mathematical Programming
Fall	6.255	Optimization Methods
Fall	6.341	Discrete-Time Signal Processing
Spring	6.344	Digital Image Processing
Spring	6.555	Biomedical Signal and Image Processing

Group 5: Circuits and Electronic Systems

Spring	6.334	Power Electronics
Fall	6.336	Introduction to Numerical Simulation
Fall	**6.374**	**Analysis and Design of Digital Integrated Circuits**
Spring	6.775	CMOS Analog and Mixed-Signal Circuit Design

Group 6: Information Science and Communication

Spring	6.262	Discrete Stochastic Processes
Fall	**6.267**	**Heterogeneous Networks: Architecture, Transport, Protocols and Management**
Fall	6.436	Fundamentals of Probability
Spring	6.437	Inference and Information
Fall	6.438	Algorithms for Inference
Fall	6.441	Information Theory
Fall	**6.450**	**Principles of Digital Communication**

Group 7: Bioelectrical Engineering

Fall	6.521	Cellular Neurophysiology and Computing
Spring	6.522	Quantitative Physiology: Organ Transport Systems
Fall	**6.556**	**Data Acquisition and Image Reconstruction in MRI**

Group 8: Electromagnetics

Fall	6.561	Fields, Forces, and Flows in Biological Systems
Fall	6.630	Electromagnetics
Fall	6.631	Optics and Photonics
Spring	6.634	Nonlinear Optics
Fall	6.640	Electromagnetic Fields, Forces and Motion
Spring	**6.685**	**Electric Machines (next offering unknown)**

Group 9: Physical Science and Engineering

Fall	6.720	Integrated Microelectronic Devices
Fall	6.728	Applied Quantum and Statistical Physics
Spring	6.730	Physics for Solid-State Applications