The TECHNICAL QUALIFYING EVALUATION (TQE): Instructions

Department of Electrical Engineering and Computer Science

Academic Year 2020-2021

New graduate students are expected to submit their TQE plan by June 1st, 2021.

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 (*see notes below)	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, 6.838 6.839*, [6.874 xor 6.878] (*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 subject 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 subject allowed)	6.630, 6.631, 6.634 6.561, 6.685 (Any 1 or 2 subject allowed)	6.720, 6.728, 6.730 (Any 1 or 2 subject allowed)

Note: Students in CS select subjects from Group 1, 2, 3 only (shaded boxes)

- 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.
- 6.825 was previously assigned 6.888 as a temporary number.
- Students in AI+D select subjects from Group 1, 2, 3 only; may also petition to use all Groups for TQE plan.

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

NOT offered academic year 2020-2021 **NOT offered academic year 2021-2022**

Group 1: Systems in CS		
Fall	**6.820**	**Foundations of Program Analysis**
Fall	6.829	Computer Networks
Fall	6.836	Multicore Programming
Spring	**6.375**	**Complex Digital Systems Design**
Spring	6.822	Formal Reasoning about Programs
Spring	6.823	Computer System Architecture
Spring	6.824	Distributed Computer Systems Engineering
Spring	6.825	Hardware Architecture for Deep Learning
Spring	6.830	Database Systems
Spring	6.858	Computer Systems Security
Group 2: Theoretical CS		
Fall	6.840	Theory of Computation
Fall	**6.841**	**Advanced Complexity Theory**
Fall	**6.852**	**Distributed Algorithms**
Fall	6.854	Advanced Algorithms
Fall	6.875	Cryptography and Cryptanalysis
Spring	6.850	Geometric Computing
Spring	**6.856**	**Randomized Algorithms**
Group 3: Artificial Intelligence		
Fall	6.438	Algorithms for Inference
Fall	6.839	Advanced Computer Graphics
Fall	**6.866**	**Machine Vision**
Fall	6.867	Machine Learning
Fall	6.878	Advanced Computational Biology: Genomes, Networks, Evolution
Spring	**6.345**	**Automatic Speech Recognition**
Spring	6.437	Inference and Information
Spring	6.832	Underactuated Robotics
Spring	6.838	Shape Analysis
Spring	6.863	Natural Language and the Computer Representation of Knowledge
Spring	6.864	Advanced Natural Language Processing
Spring	6.869	Advances in Computer Vision
Spring	**6.874**	**Computational Systems Biology: Deep Learning in the Life Sciences**
Group 4: System Science and Control Engineering		
Fall	6.251	Introduction to Mathematical Programming
Fall	6.255	Optimization Methods
Fall	6.341	Discrete-Time Signal Processing
Spring	6.231	Dynamic Programming and Reinforcement Learning
Spring	6.241	Dynamic Systems and Control
Spring	6.344	Digital Image Processing
Spring	6.555	Biomedical Signal and Image Processing
Group 5: Circuits and Electronic Systems		
Fall	6.336	Introduction to Numerical Simulation
Fall	6.374	Analysis and Design of Digital Integrated Circuits
Spring	6.334	Power Electronics
Spring	6.775	CMOS Analog and Mixed-Signal Circuit Design
Group 6: Information Science and Communication		
Fall	**6.267**	**Heterogeneous Networks: Architecture, Transport, Protocols and Management**
Fall	6.436	Fundamentals of Probability
Fall	6.438	Algorithms for Inference
Fall	6.450	Principles of Digital Communication
Spring	6.262	Discrete Stochastic Processes
Spring	6.437	Inference and Information
Spring	6.441	Information Theory
Group 7: Bioelectrical Engineering		
Fall	6.521	Cellular Neurophysiology and Computing
Fall	**6.556**	**Data Acquisition and Image Reconstruction in MRI**
Spring	6.522	Quantitative Physiology: Organ Transport Systems
Group 8: Electromagnetics		
Fall	6.561	Fields, Forces, and Flows in Biological Systems
Fall	6.630	Electromagnetics
Fall	6.631	Optics and Photonics
Fall	**6.685**	**Electric Machines**
Spring	6.634	Nonlinear Optics
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