The TECHNICAL QUALIFYING EVALUATION (TQE)
Department of Electrical Engineering and Computer Science
Academic Year 2016-2017

New graduate students are expected to submit their TQE plan by February 1st, 2017.

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.

TQE plans may be submitted online at:
Area I (EE): please visit http://www.eecs.mit.edu/EEgradrequirements
Area II (CS): please visit http://area2.eecs.mit.edu
Additional instructions will be found on each website to guide you in the submission of your TQE plan.

If you later need to make changes to your submitted TQE plan, you can print out the form at http://www.eecs.mit.edu/academics-admissions/graduate-program/graduate-office-materials and submit it to the Graduate Office, rm. 38-444. Paper change request forms can also be found in the Graduate Office. Changes are accepted prior to Drop Date in spring term 2017.

<table>
<thead>
<tr>
<th>Group 1: Systems in CS</th>
<th>Group 2: Theoretical CS</th>
<th>Group 3: Artificial Intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.820, 6.824, 6.829, 6.830,</td>
<td>6.840 (see note below),</td>
<td>[6.345 xor 6.863 xor 6.864],</td>
</tr>
<tr>
<td>6.375, 6.823, 6.836, 6.858,</td>
<td>6.841, 6.850,</td>
<td>[6.866 xor 6.869],</td>
</tr>
<tr>
<td>(Any 1 or 2 subject allowed)</td>
<td></td>
<td>6.832,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[6.831* xor 6.839*],</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[6.874 xor 6.878]</td>
</tr>
<tr>
<td>(see note below)</td>
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<td>(*see note below)</td>
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<tbody>
<tr>
<td>6.241,</td>
<td>6.334, 6.336, 6.374, 6.775</td>
<td>6.262, 6.267, 6.436,</td>
</tr>
<tr>
<td>[6.251 xor 6.255],</td>
<td>(Any 1 or 2 subject allowed)</td>
<td>[6.437 xor 6.438],</td>
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</tbody>
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<tr>
<th>Group 7: Bioelectrical Engineering</th>
<th>Group 8: Electromagnetics</th>
<th>Group 9: Physical Science and Engineering</th>
</tr>
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<tbody>
<tr>
<td>(Any 1 or 2 subject allowed)</td>
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Note: Students in Area II (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.
- 6.831 can be the second subject in Group 1 or 3, but not the only subject in either group.

Once you enter your TQE plan into the appropriate 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.
IMPORTANT: SEE NOTES BELOW REGARDING OFFERINGS

NOT offered academic year 2016-2017
NOT offered academic year 2017-2018

**Group 1: Systems in CS**

**Fall** 6.820 Foundations of Program Analysis
Spring 6.824 Distributed Computer Systems Engineering
Fall 6.829 Computer Networks
Fall 6.830 Database Systems

**Spring** 6.375 Complex Digital Systems Design
Spring 6.823 Computer System Architecture
Spring 6.836 Multicore Programming

**Fall** 6.858 Computer Systems Security
Spring 6.831 User Interface Design and Implementation

**Group 2: Theoretical CS**

**Fall** 6.840 Theory of Computation
Spring 6.841 Advanced Complexity Theory
Spring 6.850 Geometric Computing
Spring 6.856 Randomized Algorithms
Fall 6.854 Advanced Algorithms

**Group 3: Artificial Intelligence**

Spring 6.345 Automatic Speech Recognition
Fall 6.863 Natural Language and the Computer Representation of Knowledge
Spring 6.864 Advanced Natural Language Processing

**Fall** 6.866 Machine Vision
Fall 6.869 Advances in Computer Vision
Spring 6.437 Inference and Information
Fall 6.438 Algorithms for Inference
Fall 6.867 Machine Learning
Fall 6.832 Underactuated Robotics
Spring 6.831 User Interface Design and Implementation
Spring 6.839 Advanced Computer Graphics
Spring 6.874 Computational Systems Biology
Fall 6.878 Advanced Computational Biology: Genomes, Networks, Evolution

**Group 4: System Science and Control Engineering**

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
Spring 6.441 Information Theory
Fall 6.450 Principles of Digital Communication I
Fall 6.453 Quantum Optical Communication

**Group 7: Bioelectrical Engineering**

Fall 6.521 Cellular Neurophysiology
Spring 6.522 Quantitative Physiology: Organ Transport Systems

**Group 8: Electromagnetics**

Fall 6.630 Electromagnetic Waves
Fall 6.631 Optics and Photonics
Spring 6.634 Nonlinear Optics
Fall 6.561 Fields, Forces, and Flows in Biological Systems

**Group 9: Physical Science and Engineering**

Fall 6.685 Electric Machines