Information on Signal Processing Option for New Graduate Students

M.S. Students:

Students admitted to the program are assigned to a faculty member called the program advisor (not necessarily their thesis advisor) whose duty is to assist the student at the beginning of their graduate study. The program advisor guides the coursework of the student until the student is assigned to a faculty member, called the thesis advisor, for the completion of the thesis work.

The following courses[1] should be taken by MS students enrolled to the Signal Processing option.

Required Background: Contents of EE 430
Required coursework: EE 501, {EE 503 or EE 7001}

Students need to complete the seminar course (EE 590), Research Methods and Ethics course and a total 7 courses (including the mandatory courses) for the degree. These courses should be approved by the current advisor (program advisor or thesis advisor) of the student.

A thesis advisor must be assigned no later than the beginning of the second semester of the student. The student has to find his/her a thesis advisor and prepare the preliminary version of his/her thesis abstract. Upon the assignment of a thesis advisor, the student must register MS thesis (EE500) and Special Topic (EE8XX) courses of her/his thesis advisor. The assignment of a thesis advisor and abstract preparation are necessary steps for registering to EE500 and EE8XX courses.

Upon the completion of the thesis work and its approval by the thesis advisor, the student gives a presentation defending the thesis work to a jury composed of five members (four faculty members from METU and an additional juror with M.S. (or higher) degree who is not affiliated with METU-EE) Students successfully defending their thesis are awarded with MS degree.

The maximum duration for MS study is 3 years. The coursework must be completed in 2 years.

Ph.D. Students:

Students admitted to the program are assigned to a faculty member called the program advisor (not necessarily their thesis advisor) whose duty is to assist the student at the beginning of their graduate study. The program advisor guides the coursework of the student until the student is assigned to a faculty member, called the thesis advisor, for the completion of the thesis work.

Required Background: Contents of EE 430
Required coursework: EE 501, EE 503, {EE 634 or EE 7001}.

Students need to complete the seminar course (EE 690), Research Methods and Ethics course. In addition to these courses, students need to take a set of elective courses in signal processing area. In addition to courses in signal processing area, students have to select a minor field in conjuction with their thesis work. A total of 8 courses, including the courses from minor area, is required for the fulfillment of the coursework requirements. Students are welcomed to take additional courses.

[1] Course Catalog: https://eee2.metu.edu.tr/programs/courses

After the completion the coursework, the student is required to succeed in the Ph.D. qualification exam. This exam is given in both Fall and Spring semesters. Students are expected to show significant depth and breadth in major topics of signal processing associated with required coursework and significance on the selected minor area which can be telecommunications, control, computer etc. The exam has both written and oral sessions. The students can take the exam at most twice.

Students with passing grades from the qualification exam register Ph.D. thesis and Advanced Studies courses of a faculty member and conduct their research work.

Ph.D. students passing the qualification exam present their research findings at every 6 months to a committee of three members (advisor, a METU faculty member, a non-METU-EE faculty member). Students have to get the approval of the committee for the continuation of their thesis work. The thesis study is terminated if the thesis progress is not found sufficient.

Upon the writing of the thesis and its approval by the thesis advisor, the student gives a presentation to defend his/her thesis topic to a jury of five members (four faculty members from METU and an additional juror who should be a faculty member but not be affiliated with METU.)

Research Tracks in Signal Processing Option:

1. **Statistical Signal Processing**
   Related Courses: EE 503, EE 504, EE 531, EE 603, EE 633, EE 769, EE 746, EE 798, EE 7001
   Faculty Members: Ç. Candan, T. Çiloğlu, A. Koç, E. Tuncer, E. Vural, F. Öktem, Z. Ünver.

2. **Image - Video Processing:**
   Related Courses: EE 634, EE 636, EE 798
   Faculty Members: G.B. Akar, A. Alatan, F. Kamışlı, F. Öktem.

3. **Speech Processing:**
   Related Courses: EE 633
   Faculty Members: T. Çiloğlu.

4. **Classical Signal Processing Theory (filter design, wavelets etc.)**
   Related Courses: EE 601, EE 505
   Faculty Members: Ç. Candan, T. Çiloğlu, F. Öktem, E. Tuncer, Z. Ünver.

5. **Machine Vision and Learning**
   Related Courses: EE 583, EE 584, EE 543
   Faculty Members: A. Alatan, U. Halıcı.