Graduate School of Engineering and Natural Sciences

Graduate Programs Orientation
Graduate School of Engineering and Natural Sciences

Electrical-Electronics Engineering and Cyber Systems
- PhD
- MS (With Thesis)
- MS (Without Thesis)

Biomedical Engineering and Bioinformatics
- PhD
- MS (With Thesis)
- MS (Without Thesis)

Healthcare Systems Engineering
- PhD
- MS (With Thesis)

sens.medipol.edu.tr
Management Organization

Prof. Dr. Talip ALP, Director of GSENS

Assoc. Prof. Yasemin YUKSEL DURMAZ, Deputy Director of GSENS

Erol AKCAY

Hasan DUMAN
Problem Solving Organization

Advisor

Hasan DUMAN

Erol AKCAY

Assoc. Prof. Yasemin YUKSEL DURMAZ, Deputy Director of GSENS
Getting into GSENS

**ONLINE Application**

**Master Application**
- Diploma (GPA)
- ALES or GRE (55 for National, 149 for International)
- YOKDIL(55)-TOEFL(66)-PE (60/100)

**PhD Application**
- Diploma (GPA)
- ALES or GRE (55 for National, 149 for International)
- TOEFL(66) (compulsory)

**PhD Application without MS**
- Diploma (GPA min 3.00/4.00 or top three in the class)
- ALES (80 for national or 156 for International)
- YDS-YOKDIL(55)-TOEFL(66) (compulsory)

**Interview**

**Evaluation for National**
- GPA (%20)
- ALES or GRE (%50)
- Interview (30)

**Evaluation for International**
- GPA (%20)
- GRE (%50)
- Interview (30)

**Final Registration** with original copy of the documents
<table>
<thead>
<tr>
<th>Event Description</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning-End of Online Application for Fall Semester (1st Cycle)</td>
<td>April 09, 2018 - May 14, 2018</td>
</tr>
<tr>
<td>English Exam for Master Applicants</td>
<td>May 17, 2018</td>
</tr>
<tr>
<td>Interview of all Applicants</td>
<td>May 24, 2018</td>
</tr>
<tr>
<td>Announcement of Accepted Graduate Students for Fall Semester (1st Cycle)</td>
<td>June 08, 2018</td>
</tr>
<tr>
<td>Beginning-End of Online Application for Fall Semester (2nd Cycle)</td>
<td>June 18, 2018 - July 23, 2018</td>
</tr>
<tr>
<td>English Exam for Master Applicants</td>
<td>July 26, 2018</td>
</tr>
<tr>
<td>Interview of all Applicants</td>
<td>August 02, 2018</td>
</tr>
<tr>
<td>Announcement of Accepted Graduate Students for Fall Semester (2nd Cycle)</td>
<td>August 16, 2018</td>
</tr>
<tr>
<td>Final Registration for New Graduate Students (for both cycles)</td>
<td>September 10-28, 2018</td>
</tr>
<tr>
<td>Fall Semester Course Selection</td>
<td>September 24 - October 07, 2018</td>
</tr>
<tr>
<td>Fall Semester Add-Drop Term</td>
<td>October 08 - November 04, 2018</td>
</tr>
<tr>
<td>Fall Semester- Midterms</td>
<td>November 26 - December 02, 2018</td>
</tr>
<tr>
<td>Fall Semester-Make up Exam Term</td>
<td>December 10-14, 2018</td>
</tr>
<tr>
<td>Fall Semester-Final Exams</td>
<td>January 16-27, 2019</td>
</tr>
<tr>
<td>Thesis Submission Deadline for Fall Semester</td>
<td>December 10, 2018</td>
</tr>
<tr>
<td>Fall Semester-Qualifying Exam-Written Part</td>
<td>February 01, 2019</td>
</tr>
<tr>
<td>Fall Semester-Qualifying Exam-Oral Part</td>
<td>February 04-08, 2019</td>
</tr>
<tr>
<td>Event</td>
<td>Begin - End</td>
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<td>---------------------------------------------------------</td>
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<tr>
<td>Beginning - End of Online Application for Spring Semester</td>
<td></td>
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<tr>
<td>English Exam for Master Applicants</td>
<td></td>
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<tr>
<td>Interview of all Applicants</td>
<td></td>
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<tr>
<td>Announcement of Accepted Graduate Students for Spring Semester</td>
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<tr>
<td>Final Registration for New Graduate Students</td>
<td></td>
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<tr>
<td>Spring Semester - Course Selection</td>
<td></td>
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<tr>
<td>Spring Semester - Add-Drop Term</td>
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<tr>
<td>Spring Semester - Qualifying Exam - Written Part</td>
<td></td>
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<tr>
<td>Spring Semester - Qualifying Exam - Oral Part</td>
<td></td>
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<tr>
<td>Commencement</td>
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</tbody>
</table>
Each Semester

- Course selection with approval of your advisor.
- BAP application.
- Completion of BAP document based on % fellowship.
  - All first year students are fully supported, but they still need to apply for BAP and deliver proper document to accounting department.
| Minimum Course Requirement | • Graduate Seminar  
| • Scientific Research Techniques and Ethics  
| • 7 technical courses (21 credits) | Have to be 60 ECTS. |
| Minimum ECTS Requirement | 120 (7+2) courses 60 ECTS  
| +Thesis 60 ECTS |

### PhD

<table>
<thead>
<tr>
<th>Minimum Course Requirement</th>
<th>With MS Degree</th>
<th>ECTS</th>
<th>Without MS Degree</th>
<th>ECTS</th>
</tr>
</thead>
</table>
| • Graduate Seminar  
| • Scientific Research Techniques and Ethics*  
| • 7 technical course (21 credits) | 60 | • Graduate Seminar  
| • Scientific Research Techniques and Ethics  
| • 14 technical courses (42 credits) | 120 |
| • Qualifier | 30 | • Qualifier | 30 |
| • Thesis | 120 | • Thesis | 120 |
| • Guided Research | 30 | • Guided Research | 30 |
| Minimum ECTS Requirement | 240 | | 300 |

- Course load must be completed within 4 semesters, otherwise your studentship will be ended.
- Missing ECTS can be complete with “Guided Research I and II”.
- Students CAN transfer maximum half of the required course credits. This means max GSENS accepts your 3 courses

*If it hasn’t taken before
Program Durations

<table>
<thead>
<tr>
<th></th>
<th>Master</th>
<th>PhD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>With MS</td>
</tr>
<tr>
<td>Min. Time (semester)</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Max. Time (semester)</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

- End of the maximum time, who could not complete the program requirement, their studentship will be terminated.

- Maximum time to complete MS courses is 4 semester

- Maximum time to complete PhD courses is 4 semester for PHD with MS and 6 semester PhD without MS.

- Early graduation is possible from MS program (end of 3rd semester), however requires solid success.
Advisor

- Advisor needs to be assigned for all grad students until the **end of the first semester**.
- Thesis topic should be determined latest by the **end of the second semester**.
- We expect everyone to assign advisor and determine thesis topic **by the end of first semester**. Then, **students have to register thesis** after their advisor has assigned.
  - Form need to be filled. *Thesis advisor and Topic selection*
- If the thesis study requires more than one advisor second advisor can be can be either form our university or another university.
Finalizing Thesis and Graduation (MS)

- **Start planning your defense with your advisor 2 months** prior to your expected graduation (defense) day. Be careful about thesis submission deadlines.
- Obtained results should be **written as a thesis** by following the rule the GSENS defined.
- Completed thesis should be **submitted to advisor** for his/her review. Please provide your advisor time for review like **minimum 2 weeks** before thesis submission.
- **Advisors approves and submits thesis to GSENS along with all required information** for thesis defense like committee members, defense date and time etc...
- Forms need to be filled;
  - *Thesis submission form.*
  - *Application to take thesis defense exam.*
  - *Thesis exam committee and defense day.*
  - *Thesis plagiarism report form*  

- **GSENS creates the originality report** and sends it along with thesis to advisor and other committee members. *This takes 3-4 weeks.*
  - Once it is delivered to your thesis committee you have a month to defend it.
Defense Exam (MS)

- Defense committee;
  - 3 committee member including student’s advisor.
  - 1 committee member should be from another university
  - Co-advisor can join the exam.

- Exam results should be reported to GSENS within 3 days.
  - Forms need to be filled.
    - Exam result form.

sens.medipol.edu.tr/forms/
There are 3 possible results:

- Accepted
- Rejected
- Correction

Follow the procedure for diploma

Your studentship will be terminated.

Max. 3 months for correction

Re-defense
Diploma (MS)

- Within **one month** corrected and formatted thesis (3 hard copies containing complete signature of all committee members and result page of the originality report and 2 CD as electronic copy) must be submitted to GSENS. STUDENT`S ADVISOR SHOULD REVIEW THE THESIS ONE MORE TIME BEFORE PREPARING HARD COPIES.

- There is certain color and format for thesis cover and all thesis have to follow this rule.

- Graduation date will be the defense date.

- If necessary student can request 1 more month to complete this process.
  - However after this point, if thesis wont be submitted, student will be passive student and wont be able to use any right of being student. (Immigration office and army for native students)
  - End of the max. time for master program, studentship will be terminated.
THESIS TITLE HERE
SECOND LINE IF NECESSARY
THIRD LINE IF NECESSARY, FIT TITLE IN THREE LINES

MSc Thesis
Name SURNAME of student

Page margins: top & bottom: 3 cm, left & right: 2.5 cm
Paper Type: A4 Times New Roman-12 p, Logo size: 4 cm height, 10.72 cm width
Top to bottom: 3cm logo, 11cm thesis title, 15th cm thesis type and name, 21cm institute and program, 24th cm date.
Please delete this note before printing.

Graduate School of Engineering and Natural Sciences
Name of Graduate Program

Month, Year of defense
PhD

- Course load should be completed within 4 semester.
- Latest 5th semester PhD students need to take Qualifying exam (without MS-> 7th semester).
- In the 4th semester they can register to QE preparation course along with the course.

QE

- Two times in a year (end of August and beginning of February)
- Register to QE preparation course.
- End of that semester submit the form.
  - Application to take PhD Qualifying Exam
    - sens.medipol.edu.tr/forms/
Each PhD program sets their QE committee which forms sub committee based on student’s course selection.

- Sub-committee organizes the written exam
  - Prepares the written exam question
  - Evaluates the written exam question and signs the Q&A sheets
  - Committee members do not have to physically be there
  - Written exam should be same day for all students

- Sub-committee organizes the oral exam
  - If student is successful, same or different sub – committee can make the oral exam
  - Committee members have to physically be there
  - They make a final decision

Sub-committee contains student`s advisor however advisor does not have right to vote for student.
QE

- QE committee includes 5 members who can prepare and proceed the exam.
- Written exam:
  - 3 subjects out of subject pool, 3 questions by each
  - 1 question from each external committee members
  - 65% success required to take oral exam
- Oral exam:
  - 5 committee member (can be either different or similar than written com.)
  - Should include advisor, 2 members from different universities, 3 from department.
QE

- Results should be given as written document to GSENS within 3 days.
  - Forms need to be filled
    - Written PhD Qualifying Exam Result
    - Oral PhD Qualifying Exam Result
- Results can be
  - **Pass:** Follow with thesis proposal and supervision
  - **Fail:** 1 more chance for following semester.
Thesis Supervision Committee

- After passing QE a thesis supervision committee **will be established within a month**.
- Committee will contain 2 member inside and/or outside of the program.
  - Form need to be filled:
    - Thesis supervision committee
- If co-advisor wishes can join the meetings.

[sens.medipol.edu.tr/forms/](sens.medipol.edu.tr/forms/)
Thesis Proposal

- After passing QE, **within 6 months** student presents a thesis proposal to thesis committee.
  - Thesis proposal:
    - Scope of work
    - Method
    - Work Plan
- A written document should be submitted to thesis supervision committee members within **15 days before** thesis proposal presentation.
- The result of thesis proposal defense will be submitted to GSENS as a written document within 3 days.
  - Forms need to be filled:
    - Exam Result

[sens.medipol.edu.tr/forms/]
There are 3 possible results:

- **Accepted**
  - Two times in a year (Jan-June, Jul-Dec range) progress should be presented

- **Rejected**
  - New advisor and new thesis topic
  - 6 months
  - Same advisor but new topic
  - 3 months
  - New thesis proposal and defense. If necessary new supervision committee can be established.

- **Correction**
  - 1 month before meeting written progress report and future plans should be sent to thesis supervision committee.

- 1 month before meeting

- It will be evaluated again as accepted or rejected.
If student doesn’t come to thesis proposal defense without a proper excuse student will be accepted as unsuccessful and proposal will be rejected.

Minimum 3 progress reports should be submitted and presented to thesis supervision committee between acceptance of thesis proposal and PhD dissertation.
Finalizing Thesis and Graduation (PhD)

- Start planning your defense with your advisor 2 months prior to your expected graduation (defense) day. Be careful about thesis submission deadlines.
- Obtained results should be written as a thesis by following the rule the GSENS defined.
- Completed thesis should be submitted to advisor for his/her review. Please provide your advisor time for review like minimum 2 weeks before thesis submission.
- Advisors approves and submits thesis to GSENS along with all required information for thesis defense like committee members, defense date and time etc...
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- GSENS creates the originality report and sends it along with thesis to advisor and other committee members. This takes 3-4 weeks.
  - Once it is delivered to your thesis committee you have a month to defend it.
Finalizing Thesis and Graduation (PhD)

- Thesis committee:
  - 3 members should be from thesis supervision committee
  - Minimum 2 members from different university
  - In total 5 members.

- Committee will get together and make defense exam within 1 month after receiving student`s thesis.
Defense Exam

There are 3 possible results:

- Accepted
- Rejected
- Correction

Follow the procedure for diploma

Your studentship will be terminated.

Max. 3 months for correction

Re-defense
Diploma (PhD)

- Within **one month** corrected and formatted thesis (3 hard copies containing complete signature of all committee members and result page of the originality report and 2 CD as electronic copy) must be submitted to GSENS. STUDENT`S ADVISOR SHOULD REVIEWED THE THESIS ONE MORE TIME BEFORE PREPARING HARD COPIES.
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Graduate School of Engineering and Natural Sciences
Graduate Program

Month, Year of defense
For forms, letters and templates please go to sens.medipol.edu.tr
### QE subjects for EECS Program

<table>
<thead>
<tr>
<th>Courses</th>
<th>Reference Books</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering Mathematics</td>
<td>* Elementary Linear Algebra by Bernard Kolman and David R. Hill (9th edition)</td>
<td>Prof Dr. Erçüment Arvas and Assoc. Prof. Kemal Özdemir</td>
</tr>
<tr>
<td>Communication Systems</td>
<td>Communication Systems, Simon Haykin</td>
<td>Prof Dr. Hüseyin Arslan and Assoc. Kemal Özdemir and Asist. Prof. Tunçer Baykas</td>
</tr>
<tr>
<td>Electromagnetic Theory</td>
<td>Field and Wave Electromagnetics, Cheng</td>
<td>Prof Dr. Erçüment Arvas and Assoc. Kemal Özdemir</td>
</tr>
<tr>
<td>MEMS</td>
<td>MEMS &amp; Microsystems Design and Manufacture Tai-Ran Hsu McGraw-Hill</td>
<td>Asist. Prof. Yusuf Dogan</td>
</tr>
<tr>
<td>Optics</td>
<td>Optics, by Eugene Hecht, 4th Edition</td>
<td>Asist. Prof. M. Fatih Toy</td>
</tr>
<tr>
<td>Digital Systems</td>
<td>Digital Design, Mono and Ciletti</td>
<td>Prof Dr. Bahadir Kürsat Güntürk and Asst. Prof. Mehmet Kocaturk</td>
</tr>
</tbody>
</table>

**First 14 Chapters**


Johns-Martin "Analog Integrated Circuit Design" 2nd edition

- Chapter 1
- Chapter 3
- Chapter 4
- Chapter 5 (Mostly Noise part)
  - Chapter 6
  - Chapter 7
  - Chapter 8
  - Chapter 9

Asist. Prof. Hakan Dogan and Asst. Prof. Fatih Toy
## QE subjects for BMEB Program

### Biomedical Engineering and Bioinformatics PhD Program

<table>
<thead>
<tr>
<th>Courses</th>
<th>Reference Books</th>
</tr>
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<tbody>
<tr>
<td><strong>Biology</strong></td>
<td>* Molecular biology of THE CELL 5th edition by Bruce Alberts, Alexander Johnson,</td>
</tr>
<tr>
<td></td>
<td>Julian Lewis, Martin Rafi Keith Roberts, and Peter Walter</td>
</tr>
<tr>
<td></td>
<td>* Essential Cell Biology 4th edition by Bruce Alberts, Dennis Bray, Karen Hopkin,</td>
</tr>
<tr>
<td></td>
<td>Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, and Peter Walter</td>
</tr>
<tr>
<td></td>
<td>* Medical Cell Biology Third edition edited by Steven R. Goodman</td>
</tr>
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<td><strong>Engineering Mathematics</strong></td>
<td>* Elementary Linear Algebra by Bernand Kolman and David R. Hill (9th edition)</td>
</tr>
<tr>
<td><strong>Circuit Theory</strong></td>
<td>Fundamentals of Electric Circuits by Charles K Alexander, Matthew Sadiku</td>
</tr>
<tr>
<td><strong>Biomedical Instrumentation</strong></td>
<td>* Introduction to Biomedical Equipment Technology, Fourth Edition, Joseph J. Carr,</td>
</tr>
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<td></td>
<td>John M. Brown</td>
</tr>
<tr>
<td><strong>Biomaterials</strong></td>
<td>* Medical Instrumentation, Application and Design, John C. Webster</td>
</tr>
<tr>
<td><strong>Algorithms and Theory</strong></td>
<td>Data Structures and Algorithm Analysis in C++, 2nd edition by Mark Allen Weiss</td>
</tr>
<tr>
<td><strong>Data Structures and Programming Languages</strong></td>
<td>Database systems: The complete book (2nd edition) by Hector Garcia-Molina, Jeffrey D. Ullman and Jennifer Widom</td>
</tr>
<tr>
<td><strong>Database Systems</strong></td>
<td>Concrete Mathematics: A foundation for Computer Science, 2nd Edition by Ronald L. Graham and Donald E. Knuth</td>
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<tr>
<td><strong>Discrete Math</strong></td>
<td>* Elementary Linear Algebra by Bernand Kolman and David R. Hill (9th edition)</td>
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<tr>
<td><strong>Linear Algebra</strong></td>
<td>Pattern Recognition and Machine Learning by Christopher M. Bishop</td>
</tr>
<tr>
<td><strong>Machine Learning and Pattern Recognition</strong></td>
<td>Distributed Systems: Principles and Paradigms (2nd Edition) by Andrew S. Tanenbaum and Maarten Van Steen</td>
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<tr>
<td><strong>Distributed Systems and Operating Systems</strong></td>
<td>Graph Theory by Reinhard Diestel</td>
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<tr>
<td><strong>Formal Languages and Automata</strong></td>
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<td><strong>Probability and Statistics</strong></td>
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<td><strong>Graph Theory and Computer Networks</strong></td>
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