

**İSTANBUL TEKNİK ÜNİVERSİTESİ**  
**Fen Edebiyat Fakültesi - Fizik Bölümü**

<b>Course Code and Name – CRN</b>	:	<b>FIZ 374E - Methods of Experimental Physics I 20351</b>
<b>Semester</b>	:	2019-2020 Spring
<b>Course web address</b>	:	http://www.ninova.itu.edu.tr
<b>Lecturer</b>	:	Ali Gelir
<b>Contact</b>	:	<a href="http://www.akademi.itu.edu.tr/gelira">www.akademi.itu.edu.tr/gelira</a> gelira@itu.edu.tr (0212) 285 7244
<b>Weekly program</b>	:	Tuesday: 15: <sup>30</sup> -17: <sup>30</sup> (Y4) Thursday: 15: <sup>30</sup> -17: <sup>30</sup> (D102)
<b>Office Hours</b>	:	Tuesday 08: <sup>30</sup> – 10: <sup>30</sup>

**Textbooks:**

1. Measurement and Data Analysis for Engineering and Science, Patrick Dunn, CRC Press, 2010.
2. Data Acquisition Systems from Fundamentals to Applied Design, M.Emilio, Springer, 2013  
eBook: www.library.itu.edu.tr
3. An Introduction to Experimental Physics, C. Cooke, UCL Press, 1996.
4. The art of experimental physics, D. W. Preston, E. R. Dietz, Wiley, 1991.
5. Practical Data Acquisition for Instrumentation and Control Systems, J. Park, S. Mackay, Elsevier, 2003.  
eBook: www.library.itu.edu.tr
6. Industrial Control Electronics, J.M. Jacob, Prentice-Hall, 1989.
7. Introductory electronics for scientists and engineers, R. Simpson, Person, 1987.

**Course Plan**

1. Introduction to Experimental Physics
2. Statistics and Uncertainty
3. Measurement and Data Analysis
4. Measurement and Data Analysis
5. Data Acquisition Systems
6. Signal Conditioning, Amplifiers
7. Filters
8. A/D and D/A converters
9. Sensors 1
10. Sensors 2
11. Noise
12. Lock-in Amp

**Quizzes:** minimum 7 Quizzes

**Homework:** minimum 7 Homeworks

**Exams**

**Midterm I:** March. 10, 2020

**Midterm II:** April, 21, 2020

**Final:** will be announced

**Grading:**

Quizzes: %20

Homeworks: %5

Midterms: %35

Final: %40

**Attendance:** 70 % of lecture hours will be required.

**Criteria for taking the final exam:** Minimum number of quizzes must be taken is 5 and the minimum grade is 25 over 60. Students who do not meet these criteria cannot take the final exam.