

電気通信大学 平成20年度シラバス

授業科目名	Experimental Electronics Laboratory		
英文授業科目名	Experimental Electronics Laboratory		
開講年度	2008年度	開講年次	2 ~ 4 年次
開講学期	後学期	開講コース・課程	昼間コース
授業の方法	講義	単位数	2
科目区分	総合文化科目-国際科目-		
開講学科・専攻	情報通信工学科 情報工学科 電子工学科 量子・物質工学科 知能機械工学科 システム工学科 人間コミュニケーション学科		
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居室	東6-716		

公開E-Mail	授業関連Webページ
hays (at) pc.uec.ac.jp	<a href="http://www.hl.pc.uec.ac.jp/hays/electronics/eindex.htm">http://www.hl.pc.uec.ac.jp/hays/electronics/eindex.htm</a>

<b>【主題および達成目標】</b>
This course aims for providing the students, who may have no practical knowledge of electrical circuits, with the basics of analog and digital electronics through hands-on experience.

<b>【前もって履修しておくべき科目】</b>
Electrical and Electronic Circuits I and II (for Japanese students).

<b>【前もって履修しておくことが望ましい科目】</b>
None

<b>【教科書等】</b>
Lab textbook, free of charge.

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### 【授業内容とその進め方】

The student builds the following six (or seven) electrical circuits on the solderless breadboard and measure and analyze various properties.

- 1) Transformer-coupled circuits involving C and/or L. To understand the complex impedance.
- 2) Transformer-coupled circuits involving L and C. To understand resonance.
- 3) Op-amp based circuits featuring filters and phase shifter. To understand how amplifiers work.
- 4) Bipolar junction transistor (BJT). To understand basic properties of BJT.
- 5) Single-stage BJT amplifier.
- 6) Digital circuits. Logic gates, RS-flip flop and timer IC.
- 7) Optional experiments. Single-board computer based on Z80 microprocessor, phase-locked loop, or field-effect transistor (FET).

### 【成績評価方法及び評価基準(最低達成基準を含む)】

It is mandatory to finish all the projects listed above in order to acquire the credit. The score rate is 80%, where the attitude toward the experiment is also taken into account. The student must submit a report on the project within a week, which is subject to quick, oral interrogation. This postlaboratory step will be assessed at a rate of 15%. The prelaboratory test will also be assessed (5%).

### 【オフィスアワー：授業相談】

Any time you like, but lunch time is preferable. You may consider e-mail.

### 【学生へのメッセージ】

It is a lot of fun to participate in the lab experience through English.

### 【その他】

Read the tutorial sections of the textbook carefully so that you can answer the prelab questions, which will enable you to carry out experiments without difficulties.

関連図1	関連図2
 <p>Experimental Electronics Laboratory</p> <p>for JUSST students</p> <p>2007</p> <p>Professor Shigeo Hayashi</p>	<p>No Image</p>