電気通信大学　平成21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	2009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	専門科目-学科専門科目-		
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		
担当教官名	林　茂雄		
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公開E-Mail	授業関連Webページ
hays (at) pc.uec.ac.jp	http://www.hl.pc.uec.ac.jp/hays/electronics/eindex.htm

【主題および達成目標】

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.

【前もって履修しておくべき科目】

Electrical and Electronic Circuits I and II (for Japanese students).

【前もって履修しておくことが望ましい科目】

None

【教科書等】

Lab textbook, free of charge.

【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).

【授業時間外の学習（予習・復習等）】

Read the lab textbook and any textbook on electronics.

【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 prefereable. 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 prelaboratory questions, which will enable you to carry out experiments without difficulty.