

## **Instruction for Electronic Circuit Manufacturing Course**

Kazuya Ito & Kota Okada, Electronics Shop, Tech. Div., Sci. Dept.

Kenji Inami & Kazuhito Suzuki, Adv. Tech. Office, Frontier Space LGS

### **Course description**

In this course, you will learn the basics of electronic circuit, through designing and implementing the analog circuit for the "theremin", an electronic musical instrument. In the circuit designing, you will learn how to use a CAD for designing electronic systems (OrCAD 16.6). The CAD is a tool to draw a circuit diagram and to verify the operation using a simulator, giving a way to design an electronic circuit efficiently. In the circuit implementation, you will learn the electrical safety and soldering skill. Some basics of pattern designing for a circuit board can be also mentioned if desired. The basics of electronic circuit obtained in this course will be very useful not only in manufacturing and repairing experimental apparatus and measurement instruments, but also in using them correctly and safely.

### **Dates, place, tuition and GP**

- Dates: 13:30 – 16:30 on July 3<sup>th</sup>, 4<sup>th</sup> and 10<sup>th</sup>, 2018
  - Some of the dates can be rearranged upon request. Please consult to the contact address shown below.
- Place: Sci. Bldg. E, Room E-B122
- Quota: 6 people
  - Drawing lots will be used if the number of applicants exceeded the quota.
  - Laboratory training will be available only for the people who took a safety course provided by own department, institute and/or research group and will take the course guidance to be given in the first day of the course.
- Tuition fee: free for the Frontier Space LGS students,  
about 3,000 yen/person for the others.
- Grade Point(GP) for the LGS students:
  - To be evaluated, upon request, based on the attendance and progress in the course and the quality of a report to be submitted.

## **Schedule**

- Day 1: 13:30 – 16:30 on July 3<sup>th</sup> at Sci. Bldg. E, Room E-B122
  - Course guidance (tasks and laboratory training),
  - Lecture on safety,
  - Soldering exercise.
  
- Day 2: 13:30 – 16:30 on July 4<sup>th</sup> at Sci. Bldg. E, Room E-B122
  - Lecture on the circuit CAD (designing and simulation)
  - Lecture on the manufacturing circuit
  
- Day 3: 13:30 – 16:30 on July 10<sup>th</sup> at Sci. Bldg. E, Room E-B122
  - Completion of the task for the laboratory training,
  - Q&A and discussions.

## **Other remarks**

- Each participant needs to bring a laptop PC in the course, on which a Windows OS (Windows 7 or later versions) works.
- The development software tools to be used doesn't work MacOS or other OSs.
- Each participant needs to install the development software tools before the Day 1.
- To be instructed to the participants after the registration deadline.
- Tools to be used in the course will be prepared by the Elec. Shop.
- Participants should make sure if they returned all the tools after the completing the course task.
- You can bring out the teaching material so that you can test the circuit board even after the course.

## Registration

- Send an e-mail to [e-shop@sci.nagoya-u.ac.jp](mailto:e-shop@sci.nagoya-u.ac.jp) with the format shown below.

Applicant:

School year:

Research Group:

Graduate School:

Applicant's contact information (extension, e-mail address):

Supervisor:

Supervisor's contact information (extension, e-mail address):

Remarks:

- Are you a Frontier Space LGS student?
- Any other requests, e.g. to rearrange one of the course date?

- **Deadline: 17:00, Friday, June 22<sup>rd</sup>, 2018**

- **No acceptance after the deadline or by any other contact address.**
- **Registration of a student has to be sent by his/her supervisor to show the supervisor's approval.**