

JUACEP

Summer Program in  2012

# Nagoya, JAPAN

With Scholarship



Nagoya university  
**JUACEP**

Program Designed by, and  
Scholarship Sponsored by  
Nagoya University JUACEP (Japan-US Advanced  
Collaborative Education Program)

## Earn Engineering Experience

2012  
Theme

**Disaster Reconstruction and  
Energy Storage**

+ Japanese Culture Experience

### Important Dates

Application Deadline: May 15, 2012

Session Duration: July 1 - Aug. 31, 2012



Tokyo

Nagoya

Kyoto

Osaka



**NAGOYA**  
UNIVERSITY

# The JUACEP Summer Program 2012

The JUACEP (Japan-US Advanced Collaborative Education Program) is a new education program offered to senior-level undergrad and graduate students to gain their international experience through engineering study. The theme of the JUACEP 2012 summer program is the Disaster Reconstruction And Energy Storage, which is one of the most hottest topics both in Japan and all over the world. Japanese language class is also offered.

## Program at a Glance

- Course (Six Credit Hours)
  - One Credit for Intensive Lectures (taught in English)
  - Two Credits for an engineering project
  - Three Credits for Japanese Language Classes
- Industry Visits
- Social and Cultural Events

## Course Overview

### Lectures (1 credit)

Lecturers TBD (will be updated on the website. Their affiliation will be Nagoya Univ., Kyoto Univ., Tohoku Univ., Central Research Institute of Electric Power Industry, Toyota, Honda, New Energy Development Organization, UCLA, etc.)

- Fuel cell
- Lithium-ion and post-lithium batteries
- Hydrogen energy storage
- Heat pump
- Renewable & sustainable energy (PV and wind)
- Hybrid electric vehicle/ electric vehicle
- Nuclear technology and Fukushima incident

### Research Themes of Engineering Projects (2 Credits)

Each student will work on one of the research projects below.

**RT1. Ultra-high pressure synthesis and properties of energy-related materials** by Prof. M. Hasegawa (Dept. Crystalline Materials Science) <http://www.numse.nagoya-u.ac.jp/hasegawa/>

**RT2. Development of non-destructive inspection system using neutron and gamma detectors** by Prof. T. Iguchi ( Dept. Quantum Eng.) [http://www3.nucl.nagoya-u.ac.jp/index\\_en.html](http://www3.nucl.nagoya-u.ac.jp/index_en.html)

**RT3. Uncertainty quantification of fission product inventories of nuclear fuel due to numerical modeling** by Prof. A. Yamamoto (Dept. Quantum Sci. and Energy Eng. )[http://www1.nucl.nagoya-u.ac.jp/lab/index\\_English.html](http://www1.nucl.nagoya-u.ac.jp/lab/index_English.html)

**RT4. Development of a gamma camera** by Prof. A. Uritani (Dept. Quantum Sci. and Energy Eng.) <http://www9.nucl.nagoya-u.ac.jp/>

**RT5. Basic study on neutron and gamma-ray detection** by Prof. A. Uritani (Dept. Quantum Sci. and Energy Eng.) <http://www9.nucl.nagoya-u.ac.jp/>

**RT6. Nondestructive evaluation of materials by microwaves** by Prof. Y. Ju (Dept. Mech. Sci. Eng.) [http://www.mech.nagoya-u.ac.jp/ju/index\\_E.html](http://www.mech.nagoya-u.ac.jp/ju/index_E.html)

**RT7. Development of crack healing technique for metals** by Prof. Y. Ju (Dept. Mech. Sci. Eng.) [http://www.mech.nagoya-u.ac.jp/ju/index\\_E.html](http://www.mech.nagoya-u.ac.jp/ju/index_E.html)

**RT8. Fabrication and evaluation of metal nanowire array** by Prof. Y. Ju (Dept. Mech. Sci. Eng.) [http://www.mech.nagoya-u.ac.jp/ju/index\\_E.html](http://www.mech.nagoya-u.ac.jp/ju/index_E.html)

**RT9. Passive heat transport technology for effective thermal energy utilization** by Assoc. Prof. H. Nagano (Dept. Aerospace Eng.) <http://www.prop.nuae.nagoya-u.ac.jp/index.html>

**RT10. Anisotropic thermal-conductivity measurement** by Assoc. Prof. H. Nagano (Dept. Aerospace Eng.) <http://www.prop.nuae.nagoya-u.ac.jp/index.html>

**RT11. Shape and topology optimization of antennas of energy harvesters of electromagnetic waves** by Prof. T. Matsumoto (Dept. Mech. Sci. Eng.) <http://www.matsumoto.nuem.nagoya-u.ac.jp>

**RT12. Optimum designs of phononic periodic structures generating wide band gaps of elastic waves** by Prof. T. Matsumoto (Dep. Mech. Sci. Eng.) <http://www.matsumoto.nuem.nagoya-u.ac.jp>

**RT13. Topology optimizations of elastic solids subjected to dynamic loads using boundary element method** by Prof. T. Matsumoto (Dep. Mech. Sci. Eng.) <http://www.matsumoto.nuem.nagoya-u.ac.jp>

**RT14. Photovoltaic/thermoelectric hybrid solar cell** by Prof. K. Koumoto (Dept. Applied Chemistry, Chemical Eng. And Biotech) <http://www.apchem.nagoya-u.ac.jp/06-III-1/index.html>

**RT15. Scalar mixing in regular and fractal grid turbulence** by Assoc. Prof. K. Nagata (Dept. Mech. Sci. Eng.) <http://www.mech.nagoya-u.ac.jp/en/laboratories/statistical.html>

**RT16. Ultra low friction coating for high efficient advanced automobile** by Prof. N. Umehara (Dept. Mech. Sci. Eng.) <http://www.mech.nagoya-u.ac.jp/en/laboratories/manufacturing.html>

**RT17. Ultra quick coating with high density plasma for high efficient advanced automobile** by Prof. N. Umehara (Dept. Mech. Sci. Eng.) <http://www.mech.nagoya-u.ac.jp/en/laboratories/manufacturing.html>

**RT18. Design of renewable energy-based resilient electric power system** by Assoc. Prof. T. Kato (Dept. Electrical Engineering and Computer Science) <http://www.nuee.nagoya-u.ac.jp/labs/suzuokilab/>

**RT19. What the next-generation large-scale battery to be?** by Res. Lecturer Y. Ito (Dept. Mech. Sci. Eng.) This is an open-end project. Nagoya and US students team up and determine a specific theme based on the seminars and inputs given by the supervisor. It can be policy making, seed research, experimental, or whatever the team is interested in.

**RT20. Other themes** by professors of School of Engineering at Nagoya Univ.

## Japanese Language (3 credits)

This elementary Japanese course is designed for beginning learners. The purpose of this course is to introduce the most essential Japanese words and expressions for everyday life.

## Eligibility

Qualified applicants must have their studentship status for Fall 2012 either on a grad level or a senior year undergrad level in an American college. The JUACEP Scholarship will be awarded to 10 students from colleges in the United States.

## Program Fee

The JUACEP covers the necessary expense and living cost.

Term	Amount of Money	Note
Scholarship	160,000JPY	80,000JPY/month
Round-trip Air Fee (US-Japan)	——	Supported by the JUACEP
Accommodation in Nagoya	——	Supported by the JUACEP
Admission Fee	10,000JPY	Approx. 120USD
Session Tuition	88,800JPY	14,800JPY for each of the 6 credits

Visa, health insurance, local transportation and social events fees are not included.

## **Application Procedure**

Applicants are requested to send the following application documents to the JUACEP Office via Email.

- JUACEP Application Form. (<http://www.juacep.engg.nagoya-u.ac.jp/en/scholarship/application.html> )
- Enrollment Certificate
- A copy (PDF is preferable) of your passport
- A copy of your current student ID
- Your full-face picture taken within the past 3 months in a jpeg format (400 x 400 pixels or larger) for your student ID in Japan

### **Application Deadline**

Completed application forms must be sent via Email to the JUACEP Office by **May 15, 2012**.

### **Notification of Result**

The result of document screening, as conducted by Nagoya University, will be noticed by **May 25, 2012**.



### **Contact Address**

JUACEP Office

Engineering Building II, Room # 341

Graduate School of Engineering, Nagoya University

Furo-cho, Chikusa-ku, Nagoya, Aichi 464-8603, Japan

Tel & Fax: +81-52-789-2799

Email: [JUACEP@engg.nagoya-u.ac.jp](mailto:JUACEP@engg.nagoya-u.ac.jp)

Web: <http://www.juacep.engg.nagoya-u.ac.jp/en>