

## Application Procedures

Applicants are requested to send the following application documents to Nagoya University via staff at the International Office of their university or a faculty member in charge of liaison with Nagoya University. If this is not possible, applicants are asked to contact Nagoya University before submission.

- NUSIP application form
- Statement of purpose
- Health certificate
- (Non-native English Speaker) Supporting documents of English Proficiency (i.e., TOEFL, TOEIC, IELTS or the equivalent)
- Three identical photographs (3.0 cm x 4.0 cm), signed on the reverse side, one of which should be attached to the 'NUSIP Application Form'.  
A copy of the passport page which shows the applicant's name, date of birth and nationality. (Applicants who do not possess a passport at the time of application must send a copy by facsimile or e-mail as soon as they obtain one.)
- Resume

### Application Deadline

Completed application forms must reach the Student Affairs Division, Graduate School / School of Engineering by the following date:

**February 29, 2016**

### Contact Address

Student Affairs Division  
Graduate School / School of Engineering  
Nagoya University  
Furo-cho, Chikusa-ku, Nagoya, 464-8603 Japan

Tel: 81-52-789-3603/3563

Fax: 81-52-789-3979

**E-mail:** [nusip@engg.nagoya-u.ac.jp](mailto:nusip@engg.nagoya-u.ac.jp)

**Website:** <http://www.engg.nagoya-u.ac.jp/en/nusip/>

### Notification of Results

The results of document screening, as conducted by Nagoya University, will be made available to applicants by the **end of March 2016**.

**JAPAN**

**NUSIP2016**

Nagoya University Summer Intensive Program

# Latest Advanced Technology & Tasks in Automobile Engineering

+ Japanese Language



Image courtesy of motor corporations

Earn college credits while immersed in another culture and engage your intellectual curiosity with the latest findings in automobile industries in Japan that focus and succeed on a level you never thought possible. Join **NUSIP** for six weeks and experience the full range of Japanese cultural life. Course-related excursions will also provide you with an opportunity to discover amazing Japanese cultural scene that has enticed and entranced observers for generations.

**Time schedule:**

**Application Deadline: February 29, 2016**

**Course Duration: June 15 to July 21, 2016**

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## Outline

### Courses Offered

1. Seminars on Latest Advanced Technology and Tasks in Automobile Engineering (400 level) (3 credits)
2. Elementary Japanese Language Course (100 level) (3 credits)  
(Students with previous Japanese language experience will be offered a more advanced language course.)
3. Automobile industry factory and laboratory visits
4. Cultural excursions

### Student Capacity

30 overseas students (including maximum of 5 students from the universities NOT having concluded academic exchange agreements with Nagoya University), and 10 Nagoya University students

### Program Fee

- US\$1,800 for students enrolled in the universities having concluded academic exchange agreements with Nagoya University
- US\$2,500 for students enrolled in the universities NOT having concluded academic exchange agreements with Nagoya University

Both fees exclude meal and air-ticket expenses. Accommodations in Nagoya, the Japanese language course, orientation, cultural excursion and social activities are included in the program fees.

(Nagoya University students will have the fee for the Automobile Engineering course waived, but will be charged for cultural excursions and social activities.)

### Language

English

## General Information

### Overview

The 2016 summer program at Nagoya University will provide students with a rare opportunity to connect with and play a role in automobile technology. The program offers academic credits towards students' engineering degrees and beyond the core curriculum, students may further supplement their practical know-how with enrichment as they are exposed to the authentic environment of the automobile factory and research center. A Japanese language course is also offered.

### Study with an Advanced Curriculum that Gets Results

- Each lecture invites you to learn in a new context, in new ways, gaining perspectives that shape the way you engage with the automobile world.
- Each lecture is as demanding as it is rewarding, resulting from the commitment of Nagoya University faculty and, in most cases, collaboration with industrial researchers from Toyota, Honda, Nissan, Mitsubishi and so forth.
- Unlike many study opportunities abroad, the NUSIP program is led exclusively by faculty, ensuring the same quality education that students encounter on their own campus.

### Accommodations

University dormitory (single room)

### Meals

Lunch and dinner are available at the campus cafeteria at a reasonable price.

### Visa

Those who need a visa to enter Japan are responsible for getting a temporary visitor (tourist) visa.

## Health Insurance

NUSIP requires health insurance coverage for all overseas participants. Japan's National Health Insurance system is available to foreigners with long-term visas for Japan only. Therefore, overseas participants must purchase overseas health insurance prior to arrival in Japan. They are required to show proof of health insurance coverage on the first day of summer program.

## Learn from Staff Committed to Excellence

### Program Director:

Professor Tomohiko Tagawa,  
Vice-Dean, Graduate School of Engineering

### Chief Coordinator:

Designated professor Yukio Ishida,  
International Education Exchange

### Instructors (Omnibus):

Researchers or engineers from automobile companies and professors at Nagoya University

## Course Overview

### 1. Latest Advanced Technology and Tasks in Automobile Engineering (3 credits)

**Class hours: Three 45-minute classes a day**  
(13:30-14:15, 14:30-15:15, 15:30-16:15).  
Three to four days a week. Days are not fixed.

#### 1 The Car Industry, Market Trend, Circumstance and Its Future

Global market trend by region / Development process / Global automotive regulation and counter measures / Safety features / Cars in future / Electric vehicles  
[Lecturers] Not Determined (Mitsubishi Motor Corp.), Prof. Yukio Ishida (Nagoya Univ.)

#### 2 Overview of Automotive Development Process

New car model / Development process / Vehicle packaging / Performance design  
[Lecturers] Mr. Tomosaburo Okabe (Nissan Motor Co., Ltd.), Dr. Chinmoy Pal (ibd.), Prof. Koji Mizuno (Nagoya Univ.)

#### Observation and Evaluation of Drivers' Behavior

#### 3 Perspective

Measurements of drivers' behavior / Driving models / Evaluations of risk factors / Differences in characteristics of drivers  
[Lecturer] Prof. Kazuya Takeda (Nagoya Univ.)

#### 4 Car Materials and Processing

Lightweight materials for automotive applications / Innovation in metal forming / Computer aided engineering for metal forming  
[Lecturers] Mr. Hirokazu Morishita (Toyota Motor Corp.), Prof. Nobuki Yukawa (Nagoya Univ.)

#### 5 Movements and Control of a Car

Vehicle dynamics (modeling, robust control) / Driver's expectation and motion sensitivity (maneuverability and stability, ride comfort) / Vehicle dynamics integrated management (steering control, braking / traction control)  
[Lecturers] Dr. Masateru Amano (Toyota Central R & D Labs., Inc.), Dr. Masaki Nakagawa (ibd.), Prof. Toru Asai (Nagoya Univ.)

#### 6 Safety Engineering for the Prevention of Accidents

Driving-assist system / Modeling of driving behavior / Prediction of driving behavior / Recognition of environment / Innovative safety concept  
[Lecturers] Mr. Yousuke Akatsu (Nissan Motor Co., Ltd.), Prof. Tatsuya Suzuki (Nagoya Univ.)

#### 7 Crash Safety

Occupant protection / Crash worthiness / Restraint system / Impact biomechanics  
[Lecturers] Mr. Koichi Kamiji (Honda R & D Co., Ltd.), Assoc. Prof. Masahito Hitosugi (Shiga Univ. of Medical Science), Prof. Koji Mizuno (Nagoya Univ.)

#### 8 Automotive Embedded Computing Systems

Applications of automotive embedded systems / Software platform for automotive embedded systems and standardization / In-vehicle network  
[Lecturers] Mr. Kazuhiro Kajio (Toyota Motor Corp.), Prof. Hiroaki Takada (Nagoya Univ.)

#### 9 Wireless Technologies in ITS

Wireless technologies for vehicle / Wireless systems (VICS, ETC/DSRC, V2V and R2V) / Sensors for safe driving (Radar, LIDAR, Camera)  
[Lecturers] Dr. Tsuneo Nakata (DENSO Corp.), Dr. Yasuhiro Hirayama (ibd.), Prof. Masaaki Katayama (Nagoya Univ.)

## 10 Applications of CAE to Vehicle Development

Computer-aided engineering / Crash and safety / Strength and reliability / Noise and vibration / Vehicle dynamics / Computational fluid dynamics  
[Lecturers] Not Determined (Toyota Motor Corp.), Prof. Toshiro Matsumoto (Nagoya Univ.)

## 11 Energy Saving Technology for Automobiles

Hybrid electric vehicles / Electric vehicles / Energy regeneration / Mobility for the next generation / Motors / Automotive power supply & batteries  
[Lecturers] Mr. Tatsuo Teratani (Toyota Motor Corp., retired), Prof. Shinji Doki (Nagoya Univ.)

## 12 Fuels and Automobile Catalysts for Environmental Friendly Cars

Exhaust purification / Automobile catalysts / Fuels and oil refinery / Biomass utilization  
[Lecturer] Prof. Atsushi Satsuma (Nagoya Univ.)

## 13 Fundamentals of Traffic Flow Characteristics

Macroscopic traffic flow characteristics / Mechanism of traffic congestion / Shock wave analysis  
[Lecturer] Prof. Hideki Nakamura (Nagoya Univ.)

## 14 Cars and Roads in Urban Transportation Context

Efficiency of car-based transportation / Coordination with public transportation / Inflow control to city center  
[Lecturer] Prof. Takayuki Morikawa (Nagoya Univ.)

## 15 Automobiles in Aging Society

Senior driver / Driving cessation / Quality of life / Engineering and training  
[Lecturer] Prof. Hirofumi Aoki (Nagoya Univ.)

## 16 Presentation of Individual Research Projects

Overseas students conduct research projects jointly with NU students based on a project of interest. At the end of the program, each student has to give a presentation.

### Evaluation:

Attendance & participation: 20%  
Written reports for seminars (15 reports): 20%  
Presentation of group project work: 30%  
Report of group project work: 30%

## 2. Japanese (3 credits)

**Class hours: Approximately two hours per day for 6 weeks (total 45 hours)**

### 2.1 Elementary Japanese

This class is designed for students who have little or no knowledge of Japanese. This level aims to acquire the most essential language patterns for everyday life, and be able to express intentions in uncomplicated adult-level Japanese.

### 2.2 Intermediate Japanese

This class is designed for students who have already learned Japanese to some extent.

### 2.3 Advanced Japanese

This class is designed for students who can speak Japanese rather fluently.

## 3. Automobile Industry Factory and Laboratory Visits

Toyota, Mitsubishi, Nissan, Suzuki and Yokohama Rubber

## 4. Cultural Excursions

Kyoto, Nara and Tokyo

## Eligibility

- Applicants **MUST** be enrolled in universities having concluded academic exchange agreements with Nagoya University at the inter-university level or with the Graduate School of Engineering at the inter-school level. However, maximum of 5 students from the universities **NOT** having concluded academic exchange agreements with Nagoya University may join this program.
- Applicants **MUST** be of senior undergraduate or graduate status during the NUSIP period (including junior undergraduates who are completing their junior program).
- Applicants **MUST** enclose a resume and brief statement of purpose with the program application materials. Application may be downloaded.
- Applicants who are non-native speakers of English must possess a TOEFL score of 550 <CBT =213; iBT=79>, TOEIC score of 730, an IELTS overall band score of 5.5, or the equivalent, and should attach a copy of the official score record to the application. However, those studying full time at a university where the medium of instruction is the English language are exempted from this requirement.