

ky: Nhung QUAH-HOI  
tuan tie voi cuu Haon Lien quan  
Hue hien.

## 2018 GKS for ASEAN countries' SCIENCE and ENGINEERING Students Application Guide (Chosun University)

The Korean Government invites outstanding students who are majoring in the fields of science and engineering at the universities and colleges of the 10 ASEAN countries. This training program is designed to provide students with an in-depth academic training in the science and engineering fields and invaluable experience in Korea. This program seeks to nurture future leaders who will contribute to the development of global society and further friendship between Korea and their home country. Students who are interested in this training program are welcome to apply.

**Title :** 2018 GKS for ASEAN countries' SCIENCE and ENGINEERING Students

**Period :** July 16<sup>th</sup> (Monday) ~ August 17<sup>th</sup> (Friday) 2017 (5 weeks)

**Number of Participants :** 24 undergraduate students

**Host Organization :** National Institute for International Education (NIIED),  
Ministry of Education, Republic of Korea

### Eligibility

- Be a citizen of one of the 10 designated ASEAN countries\*  
\* Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam
- Be enrolled in the second to fourth year as an undergraduate student who majors in science or engineering in the university/college located in one of the 10 designated ASEAN countries
- Be fluent in English
- Be mentally and physically healthy
- Have the ability and willingness to adapt to Korean culture and life in Korea



## Training Institutions and Training Fields

| No. | Training Institution | Training Field                                                     |
|-----|----------------------|--------------------------------------------------------------------|
| 1   | Chosun University    | Mechanical Engineering, Welding and Joining<br>Science Engineering |

### a. Schedule

| Week | Mon                                    | Tue                                     | Wed                                      | Thu                                         | Fri                                                      |
|------|----------------------------------------|-----------------------------------------|------------------------------------------|---------------------------------------------|----------------------------------------------------------|
| 1    | Orientation                            |                                         | Module I ~ VI<br>(1~8 period)            | Korean Language /<br>Korean History&culture |                                                          |
| 2    | Module I<br>(1~2 period)               | Module I<br>(5~6 period)                |                                          | Module I<br>(1 period)                      | Korean<br>Language<br>/<br>Korean<br>History&<br>culture |
|      | Module II<br>(3~4 period)              | Module II<br>(7~8 period)               |                                          | Module II<br>(2~3 period)                   |                                                          |
|      | Module III<br>(5~6 period)             |                                         | Module III<br>(1~2 period)               | Module III<br>(4 period)                    |                                                          |
|      | Module IV<br>(7~8 period)              |                                         | Module IV<br>(3~4 period)                | Module IV<br>(5 period)                     |                                                          |
|      |                                        | Module V<br>(1~2 period)                | Module V<br>(5~6 period)                 | Module V<br>(6 period)                      |                                                          |
|      |                                        | Module VI<br>(3~4 period)               | Module VI<br>(7~8 period)                | Module VI<br>(7~8 period)                   |                                                          |
| 3    | Module I<br>Experiment<br>(1~8 period) | Module II<br>Experiment<br>(1~8 period) | Module III<br>Experiment<br>(1~8 period) | Module IV<br>Experiment<br>(1~8 period)     |                                                          |
| 4    | Module V<br>Experiment<br>(1~8 period) | Module VI<br>Experiment<br>(1~8 period) | Subject of<br>Research<br>(12 hours)     | Field Training<br>(4 hours)                 |                                                          |
| 5    | Field Training<br>(8 hours)            | Field Training<br>(8 hours)             | Evaluation Report & Completion Ceremony  |                                             |                                                          |

### b. Training Fields

| Module | Training Fields                              | Professor       |
|--------|----------------------------------------------|-----------------|
| I      | Additive Manufacturing (3D Printing) Process | Ahn, Dong Gyu   |
| II     | Flows behind bluff bodies                    | Jung, Sung Yong |
| III    | Automotive engineering                       | PARK, Jung Soo  |
| IV     | Thermal Energy System Renewable energy       | Cho, Hong Hyun  |
| V      | Welding Process and Design                   | Bang, Hee Seon  |
| VI     | Welding Metallurgy                           | Song, Kuk Hyun  |



## Module 1

### 전산설계 실험실

Laboratory for  
CAD/CAM/CAE



안동규 교수 (Prof. Dong-Gyu Ahn)  
Email: smart@chosun.ac.kr  
Tel: +82-62-230-7043

#### ■ Education

2002: Ph.D., Mechanical Engineering,  
KAIST

#### ■ Experience

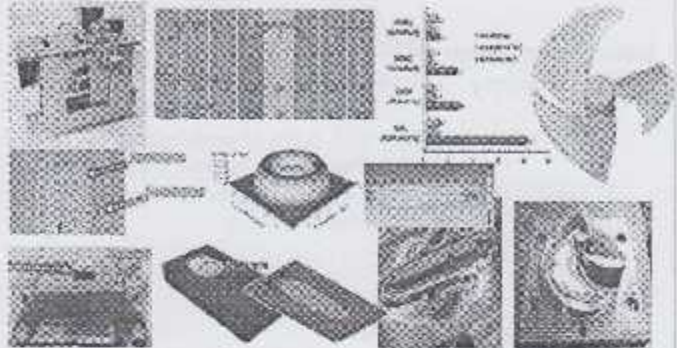
2012~: Professor, Mechanical engineering,  
Chosun Univ.  
2018~: Chair, MJT Div. of KSME  
2015~: Senior Editor, JPEM-GT (IF=3.454)  
2014~: Chair, Div. of Precision Machining  
and Additive Manufacturing of KSPE  
2017: Chair, ICMOT2017  
1994~1999: Assistant Manager,  
Daewoo Heavy Industries

#### ■ Lecture

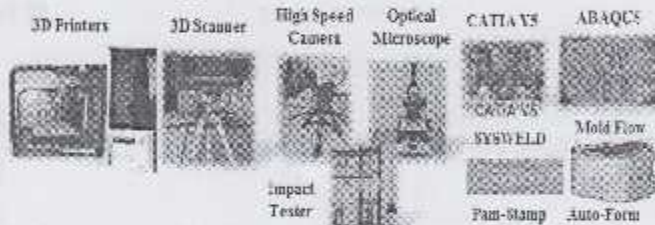
Mechanical Drawing & CAD  
Design of Manufacturing System  
Material Processing Technology

#### ■ Research

- Three-dimensional (3D) Printing
- Development of metal 3D printing process and applications



#### ■ Experimental Equipment & Analysis Software



## Module 2

### 유동가시화 실험실

Flow  
visualization



정성용 조교수  
Email: syjung@chosun.ac.kr  
Tel: +82-62-230-7051

#### ■ Education

2013: Ph.D., Mechanical Engineering,  
POSTECH

#### ■ Experience

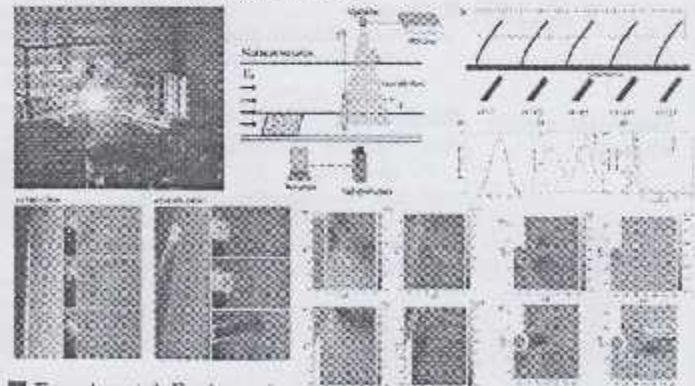
2016~: Assistant professor,  
Mechanical engineering,  
Chosun Univ.  
2013~2016: Lead Researcher,  
Hyundai Heavy Industries

#### ■ Lecture

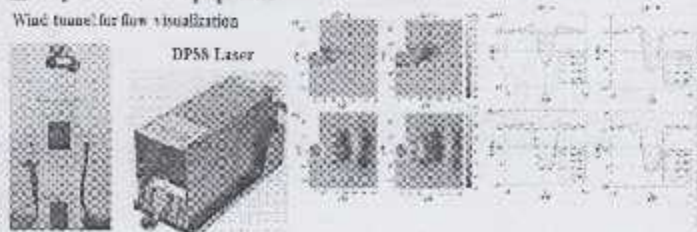
Design of Fluid Systems  
Fluid Machinery  
Flow Visualization

#### ■ Research

- Fluid-structure interactions
- Flows behind rigid and flexible cylinders



#### ■ Experimental Equipment





## Module 3

### 내연기관 실험실

#### Internal combustion engine laboratory



#### Education

2014: Ph.D., Mechanical Engineering,  
Yonsei Univ.

#### Experience

2016~: Assistant professor,  
Mechanical engineering, Chosun Univ.  
2014~2016: Senior Research Engineer,  
Doosan heavy industries & constructions  
2014.03~2014.08: Postdoctoral Research Associate,  
Yonsei University

#### Lecture

Thermodynamics(I, II)  
Internal combustion engine  
Automotive engineering

박정수 조교수

Email: j.park@chosun.ac.kr

Tel: +82-62-230-7057

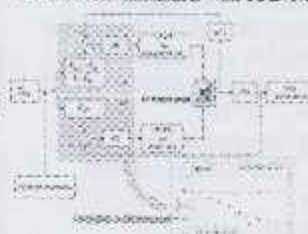
#### Research

##### (1) Optimization on automotive system

- 1D cycle simulation of internal combustion engine/HEV/EV
- Numerical model construction for model-in-the-loop(MIL)
- 1D-3D Coupling simulation

##### (2) Combustion analysis of gas turbine combustor

- Numerical simulation with RANS/LES



<Model in the loop, MIL>



<Large eddy simulation, LES>

#### Experimental Equipment

CAE simulator  
(Thunderbolt)



1D code  
(GT-POWER)



3D code  
(Converge)



## Module 4

### 신재생에너지 실험실

#### Renewable energy laboratory



#### Education

2014: Ph.D., Mechanical Engineering,  
Korea University, Seoul, Korea

#### Experience

2008~: Professor, Mechanical engineering,  
Chosun Univ.  
2007~2008: Guest researcher, NREL, NIST,  
Gaithersburg, Maryland, USA  
2005~2006: Senior Engineer, Home Appliance  
R&D Center, Samsung Electronics Co., Suwon,  
Korea

#### Lecture

Thermodynamics(I, II)  
Refrigeration & Air conditioning  
Thermal system design  
Renewable energy

조흥현 교수

Email: hhcho@chosun.ac.kr

Tel: +82-62-230-7769

#### Research

##### (1) Automobile HVAC system

- Optimization of automobile HVAC system
- Control method in Automobile HVAC system by using Bio-signal

##### (2) Nanofluid characteristics investigation and application

- Heat transfer characteristics of nanofluid
- Solar collector system using various nanofluid

##### (3) Performance improvement of plate heat exchanger

- Optimization of plate heat exchanger



<Physiological signal measurement>



<Flat plate solar collector>



<Pool boiling>



<Automobile HVAC>



<Tube solar collector>



<Plate heat exchanger>

#### Experimental Equipment

Automobile simulator &  
brain wave measurement



Solar collector system





## Module 5

### 용접공정 및 설계 실험실

#### Welding process and design laboratory



#### ■ Education

2011: Ph.D., Welding Engineering,  
OSAKA Univ.

#### ■ Experience

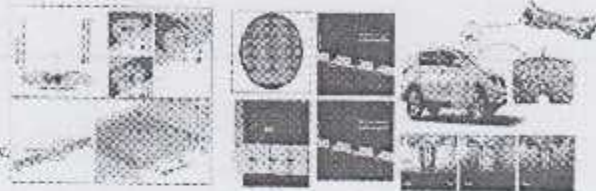
2014~: Associate professor,  
Welding and joining science engineering,  
Chosun Univ.  
2016~: Member of laser processing and material  
modification research institute committee,  
Shanghai Jiao Tong Univ., China  
2014~: Member of Pyung industry development  
committee, Ministry of trade, industry  
and energy, Government  
2003~2004: Postdoctoral Research Associate,  
Joining & Welding Research Institute, Osaka Univ.

#### ■ Lecture

Welding process  
Welding residual stress and distortion

#### ■ Research

- (1) Advanced welding process
  - CMT and laser-arc hybrid welding process
  - Friction welding process for dissimilar materials (Al, Mg, Ti/Fe)
- (2) Heat conduction and thermal elastic plastic numerical analysis
  - Soundness diagnosis of structural members and joints
  - Development of simulation technology of mechanical behavior



#### ■ Experimental Equipment

3KW Nd:YAG  
laser welding system

600W Nd:YAG laser  
welding system and  
welding robot

High temperature fatigue  
test equipment

X-ray residual stress  
Measurement equipment



방희선 교수

Email: banghs@chosun.ac.kr

Tel: +82-62-230-7215

## Module 6

### 에너지공정 실험실

#### Energy process laboratory



#### ■ Education

2010: Ph.D., Material Manufacturing Science  
Engineering, Osaka Univ., Japan

#### ■ Experience

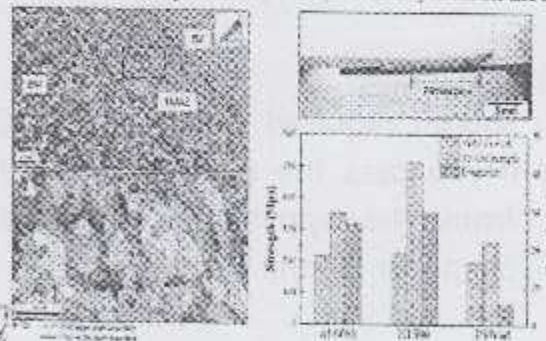
2016.9~: Assistant Professor,  
Welding & Joining Science Engineering,  
Chosun Univ.  
2010.4~2016.8: Senior Research Engineer,  
Korea Institute of Industrial Technology  
(KITECH)  
2007.8~2008.1: Special Appointed Professor,  
Joining & Welding Research Institute  
Osaka Univ., Japan

#### ■ Lecture

Material science and engineering  
Metallurgy  
Solid state welding

#### ■ Research

- \* Friction Stir Welding
  - The control of Microstructures and Mechanical Properties by welding process
  - Dissimilar materials joints such as Al/Fe, Fe/Inconel, Fe/Monel and so on



#### ■ Experimental Equipment

Friction Stir Welding Machine

Tensile Testing Machine

Vickers Microhardness Tester



송국현 조교수

Email: skhyun7@chosun.ac.kr

Tel: +82-62-230-7245



## Application

### a. Application Offices

| No. | Training Institution | Contact for Application                                                                                                                     |
|-----|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Chosun University    | Office of International Affairs<br>www.chosun.ac.kr<br>Mr. Sung-woo Lee: sungwoo2@chosun.ac.kr<br>Tel.(+82)62-230-6498, FAX(+82)62-232-7355 |

### b. How to Apply

#### 1) Foreign Universities cooperated with Chosun University

- ① Submit required documents to each university' s international office.
- ② Each University recommends Chosun University final three students based on the below criteria.

#### <Criteria>

- G.P.A. (0 ~ 30)
- English or Koeran Proficiency (0 ~ 30)
- Self Introduction & Research Plan (0 ~ 30)
- Possibility of studying abroad (0 ~ 10)

- ③ The final three students in each university will be invited for an interview from the application office. Interviews will be conducted by either Skype or phone.

#### 2) Individuals

- ① Submit required documents to Chosun University' s application office.
- ② If you pass the document screening, you will be invited for an interview from the application office. Interviews will be conducted by either Skype or phone.

**※Based on the MOU, the students recommended by cooperative foreign university get the additional point.**



c. Application Deadline : May 11 to Chosun University.

\* Applications will be processed on the first come first serve basis.

d. Required Documents

- ① Completed Application Form
- ② A Copy of the Passport Information Page
- ③ Proof of Enrollment from Currently Enrolled University
- ④ Original Sealed Transcript from Currently Enrolled University
- ⑤ Self-Introduction and Research Plan
- ⑥ A Letter of Recommendation from an Academic Source

\* Note : Additional documents may be required from the university you apply to.  
For documents ①, ⑤ and ⑥, you should use the provided template.

**Benefits**

- a. NIIED and/or the training institutions will be responsible for round trip air ticket, room and board during the duration of the program, and traveler' s insurance.
- b. Participants will be responsible for transportation fare in his/her country, visa fee, etc.

## Program

| Activities                           | Contents                                                                                                  |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Orientation                          | Introduction to the overall program                                                                       |
| Lectures                             | Specific field of study<br>Korean language, history and culture                                           |
| Research Projects,<br>Lab Activities | Conduct specific research projects along with mentoring<br>from Korean graduate students                  |
| Field Trip                           | Related laboratories, research institutes and/or industrial sites<br>Cultural or historical sites         |
| Closing                              | Presentation of research results<br>Awards to the outstanding performances<br>Formation of Alumni network |

※ Specific programs will vary according to the training institution.

## Others

- The program will be offered in English.
- Students will stay in university dormitories (2~3 persons per room, mostly Korean food will be provided).
- All lectures/events for this program will be mandatory. Participation during the weekend may be required.
- It is desirable that students make efforts to understand Korean language, education, culture and etc. by visiting our website ([www.studyinkorea.go.kr](http://www.studyinkorea.go.kr)) before their arrival in Korea.
- For further information, please contact Chosun University.