

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 16th (Monday) ~ August 17th (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 Science Engineering

a. Schedule

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

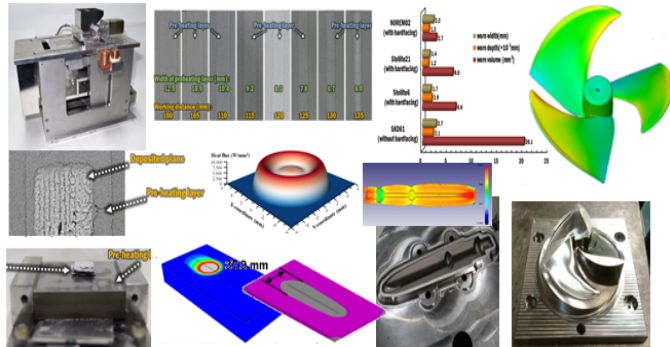
2012~: Professor, Mechanical engineering,
Chosun Univ.
2018~: Chair, MDT Div. of KSME
2015~: Senior Editor, IJPEM-GT (IF=3.454)
2015~: Chair, Div. of Precision Machining
and Additive Manufacturing of KSPE
2017: Chair, ICMDT2017
1994 ~1999: Assistant Manager,
Daewoo Heavy Industries

Lecture

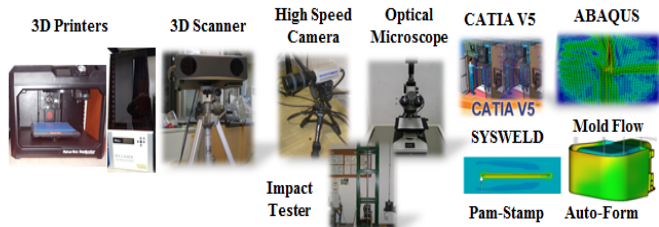
Mechanical Drawing & CAD
Design of Manufacturing System
Material Processing Technology

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

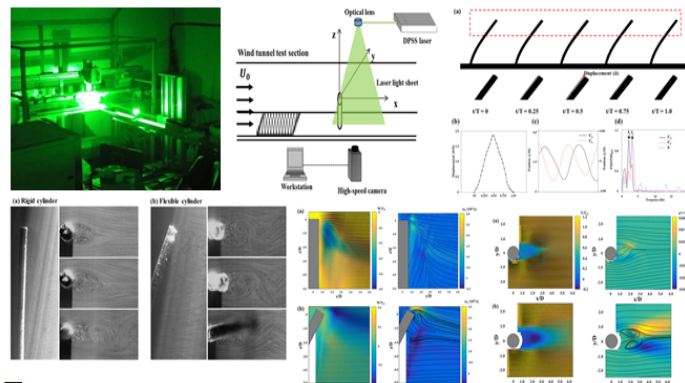
2016~: Assistant professor,
Mechanical engineering,
Chosun Univ.
2013 ~2016: Lead Researcher,
Hyundai Heavy Industries

Lecture

Design of Fluid Systems
Fluid Machinery
Flow Visualization

Research

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



Experimental Equipment

Wind tunnel for flow visualization



Module 3

내연기관 실험실

Internal combustion engine laboratory



박정수 조교수

Email: j.park@chosun.ac.kr

Tel: +82-62-230-7057

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

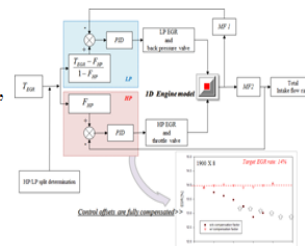
Research

(1) Optimization on automotive system

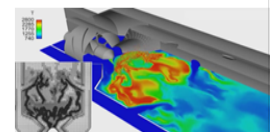
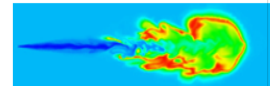
- 1D cycle simulation of internal combustion engine/HEV/EV
- Numerical model construction for model-in-the-loop(MIL)
- 1D-3D Coupling simulation

(2) Combustion analysis of gas turbine combustor

- Numerical simulation with RANS/LES

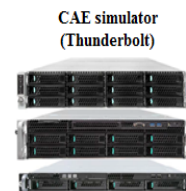


<Model-in-the-loop, MIL>

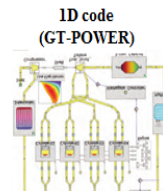


<Large eddy simulation, LES>

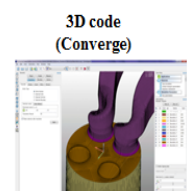
Experimental Equipment



CAE simulator
(Thunderbolt)



1D code
(GT-POWER)



3D code
(Converge)

Module 4

신재생에너지 실험실

Renewable energy laboratory



조홍현 교수

Email: hhcho@chosun.ac.kr

Tel: +82-62-230-7769

Education

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

Experience

2008~: Professor, Mechanical engineering,
Chosun Univ.
2007~2008: Guest researcher, BFRL, 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

Research

(1) Automobile HVAC system

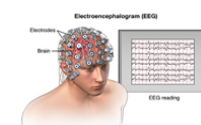
- Optimization of automobile HVAC system
- Control method in Automobile HVAC system by using Bio-signal

(2) Nanofluid characteristics investigation and application

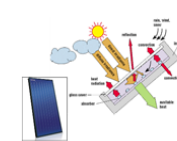
- Heat transfer characteristics of nanofluid
- Solar collector system using various nanofluid

(3) Performance improvement of plate heat exchanger

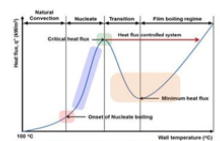
- Optimization of plate heat exchanger



<Physiological signal measurement>



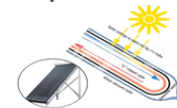
<Flat-plate solar collector>



<Pool boiling>



<Automobile HVAC>



<U-tube solar collector>



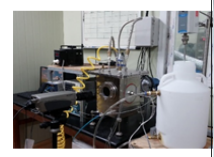
<Plate heat exchanger>

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 Ppuri 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

방희선 교수

Email: banghs@chosun.ac.kr

Tel: +82-62-230-7215

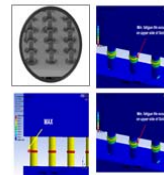
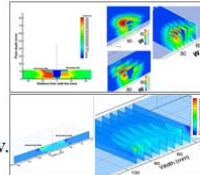
Research

(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



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)
2007.8~2008.3: Special Appointed Professor,
Joining & Welding Research Institute
Osaka Univ., Japan

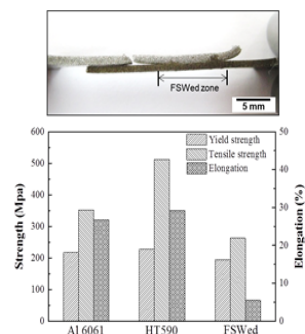
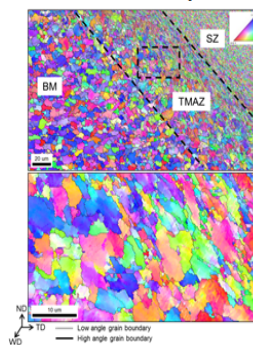
Lecture

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 www.chosun.ac.kr Mr. Sung-woo Lee: sungwoo2@chosun.ac.kr 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 Korean language, history and culture
Research Projects, Lab Activities	Conduct specific research projects along with mentoring from Korean graduate students
Field Trip	Related laboratories, research institutes and/or industrial sites Cultural or historical sites
Closing	Presentation of research results Awards to the outstanding performances 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) before their arrival in Korea.
- For further information, please contact Chosun University.