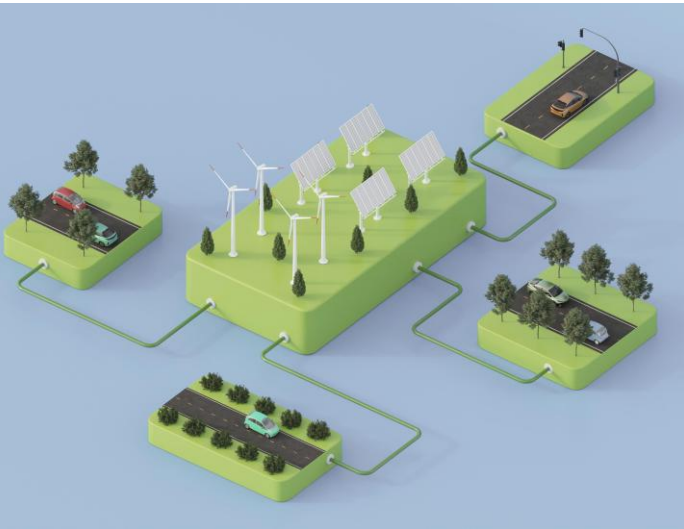


College of Engineering
Department of Materials Science
and Engineering
at Sungshin Women's University



Department Introduction

To cultivate experts who can lead in the fields of sustainability, environmental management, resource and energy cycles, international environmental regulations, clean production technology, and a culture of clean consumption, by integratively learning climate change, proper conservation and use of environment, energy, and resources, sustainable production and consumption, as well as the diagnosis/evaluation/improvement of environmental friendliness.



Educational Goals

1. Training Eco-friendly Integrated Science and Technology Professionals for Resource and Energy Cycles.
2. Developing Talent in Response to Global Societal and Corporate Needs.
3. Conducting Research on Promising Emerging Technologies of the Future (Energy, Environment, Nanotechnology, etc.).
4. Activation and Qualitative Enhancement of Convergent Research.

Desired Student Model

Professionals with Expertise in Future Convergent Science and Technology Demanded by Society, Possessing Creative Abilities.



Professors



Hong Hyunseon, PhD

Field	Materials Science and Engineering
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Yang Inmog, PhD

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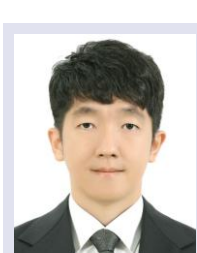
Lee Sehyun, PhD

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Yoonho Lee, PhD

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Curriculum

Freshman



Department	Completion Type	Course Title (Course Code)	Schedule	Semester	Credit	Remarks
Department of Materials Science & Engineering	Primary	General Chemistry Laboratory 1 (LE000200)	Annual	First	2	
Department of Materials Science & Engineering	Primary	Advanced Materials and Future Science and Technology (LE003600)	Annual	First	3	
Department of Materials Science & Engineering	Primary	Introduction to Environmental, Energy, and Materials Convergence (LE000300)	Annual	Second	3	
Department of Materials Science & Engineering	Primary	General Chemistry Laboratory 2 (LE000400)	Annual	Second	2	
Department of Materials Science & Engineering	Primary	Materials and the Environment (LE001200)	Annual	Second	3	



Curriculum

Sophomore >>>

Department	Completion Type	Course Title (Course Code)	Schedule	Semester	Credit	Remarks
Department of Materials Science & Engineering	Primary	Physical Properties of Materials (LE000100)	Annual	First	3	
Department of Materials Science & Engineering	Primary	Introduction to Crystallography (LE000900)	Annual	First	3	
Department of Materials Science & Engineering	Primary	Materials Science & Engineering 1 (LE001100)	Annual	First	3	
Department of Materials Science & Engineering	Primary	Thermodynamics (LE001400)	Annual	First	3	
Department of Materials Science & Engineering	Primary	Environment and Sustainability (LE002300)	Annual	First	3	
Department of Materials Science & Engineering	Primary	Modern Physics (LE003500)	Annual	First	3	



Curriculum

Sophomore >>>

Department	Completion Type	Course Title (Course Code)	Schedule	Semester	Credit	Remarks
Department of Materials Science & Engineering	Primary	Basic Materials Engineering Lab 1 (LE003900)	Annual	First	2	
Department of Materials Science & Engineering	Primary	Introduction to Renewable Energy Engineering (LE000700)	Annual	Second	3	
Department of Materials Science & Engineering	Primary	Materials Science & Engineering 2 (LE000800)	Annual	Second	3	
Department of Materials Science & Engineering	Primary	Solid State Chemistry (LE002600)	Annual	Second	3	
Department of Materials Science & Engineering	Primary	Introduction to Electronic and Magnetic Properties of Materials (LE003800)	Annual	Second	3	
Department of Materials Science & Engineering	Primary	Basic Materials Engineering Lab 2 (LE004000)	Annual	Second	2	



Curriculum

Junior >>>

Department	Completion Type	Course Title (Course Code)	Schedule	Semester	Credit	Remarks
Department of Materials Science & Engineering	Advanced	International Environmental Regulations (LE001600)	Annual	First	3	
Department of Materials Science & Engineering	Advanced	Electrochemistry (LE001700)	Annual	First	3	
Department of Materials Science & Engineering	Advanced	Materials Engineering Laboratory 1 (LE001900)	Annual	First	2	
Department of Materials Science & Engineering	Advanced	Nanomaterials Engineering (LE002000)	Annual	First	3	
Department of Materials Science & Engineering	Advanced	Resource Recycling Engineering (LE002800)	Annual	First	3	
Department of Materials Science & Engineering	Advanced	Metallic Materials (LE003700)	Annual	First	3	
Department of Materials Science & Engineering	Advanced	Phase Equilibria and Phase Transformations (LE001500)	Annual	Second	3	



Curriculum

Junior >>>

Department	Completion Type	Course Title (Course Code)	Schedule	Semester	Credit	Remarks
Department of Materials Science & Engineering	Advanced	Energy Materials Engineering (LE001800)	Annual	Second	3	
Department of Materials Science & Engineering	Advanced	Catalysis Engineering (LE002100)	Annual	Second	3	
Department of Materials Science & Engineering	Advanced	Climate Change and Greenhouse Gas Management (LE002200)	Annual	Second	3	
Department of Materials Science & Engineering	Advanced	Materials Engineering Laboratory 2 (LE002400)	Annual	Second	2	
Department of Materials Science & Engineering	Advanced	Instrumental Analysis of Materials (LE002900)	Annual	Second	3	
Department of Materials Science & Engineering	Advanced	Strategic Core Materials Engineering (LE003200)	Annual	Second	3	



Curriculum

Senior >>>

Department	Completion Type	Course Title (Course Code)	Schedule	Semester	Credit	Remarks
Department of Materials Science & Engineering	Advanced	Creative Engineering Design and Entrepreneurship (Capstone Design) 1 (LE001000)	Annual	First	2	
Department of Materials Science & Engineering	Advanced	Materials Processing Technology (LE002700)	Annual	First	3	
Department of Materials Science & Engineering	Advanced	Polymer Materials (LE003300)	Annual	First	3	
Department of Materials Science & Engineering	Advanced	Creative Engineering Design and Entrepreneurship (Capstone Design) 2 (LE001300)	Annual	Second	2	
Department of Materials Science & Engineering	Advanced	Semiconductor Materials and Processes (LE003000)	Annual	Second	3	
Department of Materials Science & Engineering	Advanced	Ceramic Materials (LE003400)	Even Years	Second	3	



Advanced Materials Track



Track Description

Training Future-oriented Professionals by Integrating Energy and Environmental Fields with a Focus on Advanced Materials.

Related Major Competencies

Specialization in Advanced Material Integration, Professional Practical Skills

Specialized Career Paths

National and private universities, government-funded research institutes, Public Institution, Large and small to medium-sized enterprises (in the fields of resources and advanced materials)

Curriculum

Section	Semester	Course Title	Credit
1	1	General Chemistry Laboratory 1	2
2	1	Materials Science & Engineering 1	3
2	2	Materials Science & Engineering 2	3
2	1	Thermodynamics	3
3	2	Energy Materials Engineering	3
2	1	Basic Materials Engineering Lab 1	2
2	2	Basic Materials Engineering Lab 2	2
3	1	Resource Recycling Engineering	3
4	1	Capstone Design 1	2
4	2	Capstone Design 2	2
4	1	Materials Processing Technology	3



SUNGSHIN WOMEN'S UNIVERSITY

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