College of AI Convergence

■ **School of Artificial Intelligence**

· Artificial Intelligence Major　　　　　　· Software Major

■ **Dept. of Big Data Convergence**

■ **Dept. of Intelligent Mobility**

■ **Major in Robotics Engineering Convergence**

■ **Major in Future Energy Engineering Convergence**

■ **Major in Big Data Financial Engineering Convergence**

■ **Major in IoT Artificial Intelligence Convergence**

■ **Intelligent Mobility Convergence Engineering**

■ **Majof of Intelligent & Immersive Media Convergence**

School of Artificial
Intelligence

__Contact Information
Phone: +82−62−530−4206
Fax: +82−62−530−4208
URL: http://aisw.jnu.ac.kr

■ What is School of Artificial Intelligence?

We aim to train intelligent software experts who can lead the future information society. Our students can development various intelligent applications with the knowledge of software engineering. Based on basic mathematical knowledge, the ability to develop intelligent software such as machine learning and deep learning is cultivated. The curriculum includes AI technologies which can be used in various application fields such as image processing and natural language processing. The goal is to nurture professional talents for software, artificial intelligence, and information security required throughout the industry.

■ Professors

- Hyeong-seok Lim, Ph.D.
  [Professor, hslim@jnu.ac.kr]
  (Algorithm)
- Deok-jai Choi, Ph.D.
  [Professor, dchoi@jnu.ac.kr]
  (Computer Network)
- Soo-hyung Kim, Ph.D.
  [Professor, shkim@jnu.ac.kr]
  (Artificial intelligence)
- Hyuk-ro Park, Ph.D.
  [Professor, Information Retrieval,
  hyukro@jnu.ac.kr]
- Hyung-jeong Yang, Ph.D.
  [Professor, hjyang@jnu.ac.kr]
  (Application software)
- Kyung-baek Kim, Ph.D.
  [Professor, kyungbaekkim@jnu.ac.kr]
  (Distributed Network System)

- Kwang-hoon Choi, Ph.D.
  [Professor, kwanghoon.choi@jnu.ac.kr]
  (Programing Languages & Software Security)
- Hie-yong Jeong, Ph.D.
  [Associate Professor, h.jeong@jnu.ac.kr
  (Intelligence Robotics & Signal Processing)
- Seok-bong, Yoo, Ph.D.
  [Associate Professor, sbyoo@jnu.ac.kr]
  (Visual intelligence,Image and Video Processing)
- Yeong-Jun Cho, Ph.D.
  [Assistant Professor, yj.cho@jnu.ac.kr]
  (computer vision)
- Seung-Won Kim, Ph.D.
  [Assistant Professor, Seungwon.Kim@jnu.ac.kr]
  (AR/VR)
- Tae-June Park, Ph.D.
  [Assistant Professor, taejune.park@jnu.ac.kr]
  (Information Security/Network)

■ Degree Requirements

Students are required to earn 140 credits, normally over a period of 4 years (8 semesters).

■ What Do You Study?

Artificial Intelligence Major

▮ Core Courses
Introduction to Economics
Computational Thinking for Engineering
Writing in the Natural Sciences and Engineering
Mathematics 1
Technology and Entrepreneurship
Basic Statistics

▮ Electives
Introduction to Engineering Design
Engineering Mathematics 1
Logic Circuits
Discrete Mathematics
C Programming and Practice
Data Communication
Linear Algebra
Web Programing and Practice
Computer System Architecture
Probability and Statistics
Introduction to Data Science
Software System Design
System Programming
Opensource Software
Computer Networks
Linux System
Mobile Application Software
Operating System

AI-System
IoT System
Data Base Systems
Parallel Programming
Compilers
Introduction to Data Mining
Deep Learning
Industry-University Cooperation Project (Capstone Design)
Image Understanding
Knowledge Representation and Reasoning
Robot Operating System
Signals and System
Natural Language Processing
Computer vision
Reinforcement learning
Introduction to Information Retrieval Systems
Speech Recognition
Service Robot
Introduction to Probabilistic Graphical Model

▮ Minor Courses
JAVA Programing and Practice
Algorithms
Artificial Intelligence
Data Structures
Artificial Intelligence Capstone Design

Software Major

▮ Core Courses
Introduction to Economics
Computational Thinking for Engineering
Writing in the Natural Sciences and Engineering
Mathematics 1
Technology and Entrepreneurship
Basic Statistics

▮ Electives
Introduction to Engineering Design

Discrete Mathematics
Logic Circuits
Engineering Mathematics 1
C Programming and Practice
Probability and Statistics
Computer System Architecture
Web Programing and Practice
Linear Algebra
Data Communication
Computer Networks

Artificial Intelligence

Opensource Software

System Programming

Software System Design

Introduction to Data Science

Theory of Programming Languages

Embedded Software

Operating System

Software Engineering

Mobile Application Software

Linux System

Computer Graphics

Compilers

Parallel Programming

Data Base Systems

C++ Programing and Practiece

Industry-University Cooperation Project (Capstone Design)

Software Reverse Engneering

Intelligence Human Computer Interface

Cloud Computing

Information Security

Distributed Systems

Advanced Algorithms

Game Software

Introduction to Computer Simulation

Image Processing

Software Verification

Blockchain Applications

Theory of Computation

Virtual Reality

▌ Minor Courses

JAVA Programing and Practice

Algorithms

Data Structures

Artificial Intelligence

Software Capstone Design

Department of
Big Data Convergence

__Contact Information
Phone: +82-62-530-3440
Fax: +82-62-530-3449
URL: http://bigdata.jnu.ac.kr

■ What is Dept. of Big Data Convergence?

Students learn breadth of knowledge that data scientists should have: (1) learn how to handle and how to analyse big data in various fields (2) learn to understand complex problem in the context of Big Data (3) learn to predict statistical model beforehand and to provide appropriate solution.

■ Professors

• Jaesik Jeong, Ph.D.
[Associate Professor, Bioinformatics (Metabolomics, Genomics), Biostatistics (clinical trials), Bayesian analysis, jjs3098@jnu.ac.kr]

• IlSu Choi, Ph.D.
[Professor, Bayesian Statistics (MCMC), Mathematical Biology, Environmental Ecology Statistics, ichoi@jnu.ac.kr]

• Min-Kyu Kwak, Ph.D.
[Professor, Analysis, mkkwak@jnu.ac.kr]
Partial Differential Equations,
Ordinary Differential Equations,
Dynamical Systems

• Byeong-Chun Shin, Ph.D.
[Professor, Applied Mathematics, bcshin@jnu.ac.kr]
Numerical Analysis

• Hong-Sung Jin, Ph.D.
[Professor, Applied Mathematics,

hjin@jnu.ac.kr]
Uniform Superconvergence Wavelets

• MinSoo Kim, Ph.D.
[Professor, Multivariate Analysis, Image Partition or Searching, Financial Statistics. kimms@jnu.ac.kr]

• Hyun-Cheul Lim, Ph.D.
[Associate Professor, limhc@jnu.ac.kr]
Financial Mathematics

• BongGyun Ko, Ph.D.
[Associate Professor, interpretative public intelligence, bonggyun.ko@jnu.ac.kr]

• Jeong-Gyu Huh, Ph.D.
[Assistant Professor, huhjeonggyu@jnu.ac.kr]
Machine-learning-based financial engineering

• Kwangmin Lee, Ph.D.
[Assistant Professor, Baysian Statistics, klee564@jnu.ac.kr]

■ Degree Requirements

Students are required to earn 130 credits, normally over a period of 4 years (8 semesters).

■ What Do You Study?

▌ General Education Core Courses

Introduction to Statistics
Scientific exploration of Big Data

Career design and self-understanding
Big data based Investment

Year 1 Courses
▌ **Core Courses**

Introduction to Programming

▌ **Electives**

Mathematics for big data 1

Mathematics for big data 2

Big data programming

Statistical package and practice

Year 2 Courses
▌ **Core Courses**

Machine Learning

Mathematical Statistics 1

Mathematical Statistics 2

▌ **Electives**

Exploratory Data Analysis

Big data Computing

Survey Sampling

Statistical deep learning

Statistical Computation and Simulation

Financial Statistics

Experimental Design

Year 3 Courses
▌ **Core Courses**

Applied Deep Learning

Big data Analysis and Practice

▌ **Electives**

Regression Analysis and Lab.

Bayesian statistics and Practice

Big data Algorithm

Survival Analysis

Statistical Network

Multivariate Data Analysis and Practice

Data Mining and Practice

Categorical Data Analysis

Financial Statistics and Practice

Database System

Statistical Optimization

Year 4 Courses
▌ **Electives**

Time Series Data Analysis and Lab

Numerical Analysis of Big data

Big data Capstone design

Stochastic Process

Statistical Data Analysis and Practice

Biomedical Big Data Modeling

Big data Treatment and Practice

Minor Courses

Mathematical Statistics 1

Mathematical Statistics 2

Regression Analysis and Lab

■ What is Dept. of Intelligent Mobility ?

Intelligent mobility, the core of the 4th industrial revolution, refers to futuristic vehicles and transportation means, which incorporates multidisciplinary subjects from mechanical, electrical, computer science, and material engineering. Eco-friendly vehicles, autonomous driving, smart communication and security, sensors and control are the main core of this interdisciplinary department, as well as fundamental vehicle and mobility dynamics.

The goal of this program is to educate students for future vehicles and mobility by strengthening basic core theories and comprehensive design subjects. The program is aiming to increase students' R&D and design capabilities and the field adaptability by implementing advanced curriculum and operating field-tailored experiments.

In addition, this department is participating in the Gwangju BitGreen Industry-university joint research program which provides the unique, creative, and industry-oriented education and research opportunities for students to be prepared for the related fields.

■ Professors

- Daeyong Kim, Ph.D.
  [Professor, Structures Design, Manufacturing, Mechanics of Materials, daeyong.kim@jnu.ac.kr]
- Gyuhae Park, Ph.D.
  [Professor, Smart Material/sensor/actuator, gpark@jnu.ac.kr]
- Chunhwan Lee, Ph.D.
  [Professor, Powertrain Control, chunhwan@jnu.ac.kr]
- Chansoo Kim, Ph.D.
  [Assistant Professor, Autonomous driving, chansoo.kim@jnu.ac.kr]
- Yong Min, You, Ph.D.
  [Associate professor, [Electric vehicles, Electric machines, ym.you@jnu.ac.kr]
- Wonoh Lee, Ph.D.
  [Professor, Composite Materials / Mechanics of

Inelastic Materials, wonohlee@jnu.ac.kr]
- Woohyun kim, Ph.D.
  [Associate Professor, Modeling, analysis and control of thermal systems,
- Moon, Chang-bae, Ph.D.
  [Associate Professor, Mobile Robot / Autonomous Vehicle, cbmoon@jnu.ac.kr]
- Byung-Chul Choi, Ph.D.
  [Professor, Combustion Engineering, Technology for Engine After-treatment, bcchoi @jnu.ac.kr]
- Hyun Wook Kang, Ph.D.
  [Professor, Micro Fluidics, Nano Technology and System kanghw@jnu.ac.kr]
- Jinsoo Park, Ph.D.
  [Assistant Professor, Microfluidics /

Flow Visualization, jinsoopark@jnu.ac.kr]
- Jaehyung Park, Ph.D.
  [Professor, Network Technology,
- Myoungjin Lee, Ph.D.
  [Professor, Semiconductor device & Circuit design, mjlee@jnu.ac.kr]
- Sungjune Baek, Ph.D.
  [Professor, Digital Signal Processing,
- Lee, Joon-Woong, Ph.D.
  [Professor, Computer Vision & Software Development for Autonomous Vehicles, joonlee@jnu.ac.kr]
- Kyeong-Hwan Lee, Ph.D.
  [Professor, Sensors and Intelligent Biosystems, khlee@jnu.ac.kr]
- Seol, Seoung-Yun, Ph.D.
  [Professor, Thermal fluid system, syseol@jnu.ac.kr]

- Kang, Bo-Seon, Ph.D.
  [Professor, Fluid dynamics, bskang@jnu.ac.kr]
- Yang, Young-Soo, Ph.D.
  [Professor, Laser material processing, ysyang@jnu.ac.kr]
- Hong, Soonwook, Ph.D.
  [Assistant Professor, Laser physics, ysyang@jnu.ac.kr]
- Han, Seunghwoi, Ph.D.
  [Assistant Professor, Laser physics,, ysyang@jnu.ac.kr]
- Jin-Sul Kim, Ph.D.
  [Professor, Multimedia QoS/QoE, Edge Computing, Intelligence Virtual Platform, IT Convergence Technologies, Deep Learning, jsworld@jnu.ac.kr]

■ Degree Requirements

The undergraduate programs are designed to help students develop the capability needed to meet the challenges of the modern technological society in Dept. of Intelligent Mobility Students are required to complete at least 140 credit hours which normally takes four years of full-time study. Students are also able to enrolled in double majors or minors as a means of broadening the scope of their studies.

■ What Do You Study?

▮ Core Courses
Mathematics 1
Mathematics 2
General Physics 1
General Physics 2
Basic Physics Experiments 1
Basic Physics Experiments 2

▮ Required Courses
Solid Mechanics
Dynamics
Autonomous Driving for Mobility 1
Electromagnetic Fields and Energy Conversion
Mobility Seminar 1

Mobility Experiments 1
Mobility Experiments 2

▮ Electives
Introduction to Automotive Engineering
Statics
Basics of Computer Programming
Object-Oriented Programming
Engineering Mathematics 1
Mechanical Drawing
Electric Circuit
Engineering Mathematics 2
Computing System
Data Structures and Algorithms

Electronic Circuit

Mechanical Design

Microprocessor

Numerical Analysis

Artificial Intelligence

Power Electronics

Vehicle NVH

Perception System for Mobility

Electronic System for Mobility

Network System for Mobility

Finite Element Method

Control Engineering

Automotive Sensors and Measruement Engineering

Creative Engineering Design

CAD/CAM with Practice

Mobility Seminar 2

Operating System for Mobility

Power Conversion System for Mobility

Mobility Capstone Design1

Navigation System for Mobility

Vehicle Electronics System and Control

Vehicle Dynamics

Automotive Manufacturing Processes

Mobility Service

Mobility and Energy

Autonomous Driving for Mobility 2

Mobility Capstone Design2

Embeded System

Introduction to Automotive Design

Vehicle Powertrain System

Major in
Robotics Engineering
Convergence

__Contact Information
Phone: +82−62−530−4205
Fax: +82−62−530−4208
URL: http://cvg.jnu.ac.kr

What is Major in Robotics Engineering Convergence?

The Major in Robotics Engineering Convergence aims for fostering talent to apply robotics, the leading technology of the 4th industrial revolution, to future industries and life where a new paradigm is required and to answer various engineering problems.

The Major in Robotics Engineering Convergence offers students a multidisciplinary education, allowing them to develop convergent systems by learning the fundamentals of robotics such as mechanical, electrical, electronic, and computer systems, and non-engineering disciplines such as design, marketing, and cultural contents.

Professors

- Doyeon Bang, Ph.D.
  [Associate Professor, Soft Robotics, 4D Printing,
- Seong-Yong Ko, Ph.D.
  [Professor, Medical Robotics,
  Service Robotics, sko@jnu.ac.kr]
- Chang-Sei Kim, Ph.D.
  [Associate Professor, Dynamics and Control,
  Biomedical System, ckim@jnu.ac.kr]
- Moon, Chang-bae, Ph.D.
  [Associate Professor, Mobile Robot
  / Autonomous Vehicle, cbmoon@jnu.ac.kr]
- Byungjeon Kang, ph.D
  [Assistant Professor, Microrobot and
  Micromanipulation for biomedical applications,

  bjkang8204@jnu.ac.kr]
- Eunpyo Choi, Ph.D.
  [Associate Professor, Medical micro/nano
  robotics, eunpyochoi@jnu.ac.kr]
- Lee, Jae Yeol, Ph.D.
  [Professor, HCI Design,
  jaeyeol@jnu.ac.kr]
- Hyoung Il Son, Ph.D.
  [Professor, Human-Centered Robotics
  and Automation, hison@jnu.ac.kr]
- Ayoung Hong, Ph.D.
  [Assistant Professor, Autonomous Intelligent
  Robotics, ahong@jnu.ac.kr]

Degree Requirements

Students are required to earn 130 credits, normally over a period of 4 years (8 semesters).

What Do You Study?

❚ **Core Courses**
Basic Statistics
English for Global Communication 1
Artificial Intelligence Basics

General Physics 1

❚ **Electives**
Engineering Mathematics 1

Mechanical drawing
Kinematics of Mechanisms
Logic Circuits
Introduction of Electricity and Electronics
Object-Oriented Programming
Engineering Mathematics 2
Mechatronics
Measurement Engineering
Machine Learning
Biosystems Modeling and Practice
System Dynamics and Signal Processing
Knowledge Engineering
Computer Graphics
Biosystems Robotics
Control Engineering
Intelligent Vehicle
Human Interface Engineering

Robot Operating System
Microrobot
Biosystem Measurements
Mechanical Vibrations
Applied Robotic Systems
Advanced Microrobotics
Intelligent Soft Robots
Introduction to MEMS (MicroElectroMechanical Systems)

❚ Minor Courses
Applied Calculus
Dynamics
C Programming & Practice
Robot Engineering
Robotics Practice 1
Robotics Practice 2

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Major in
Future Energy
Engineering
Convergence

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__Contact Information
Phone: +82−62−530−4205
Fax: +82−62−530−4208
URL: http://cvg.jnu.ac.kr

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■ What is Major in Future Energy Engineering Convergence?

As directly linked to the survival of humankind, future energy is one of the most important issues in the 21st century. Since the future energy industry evolves from the facility-centered to the knowledge-based industry, the Major in Future Energy Engineering Convergence fosters talent to lead industrial sites where the convergence between disciplines rapidly proceeds.

The Major in Future Energy Engineering Convergence aims for answering field problems beyond basic studies, broadening its horizons into practical energy and in-depth technology studies, and exploring global energy technologies encompassing different disciplines and regions.

■ Professors

• Sung-Yong Cho, Ph.D.
[Professor, Eco-Energy and Air Pollution Engineering, syc@jnu.ac.kr]

• Ho-Young Jung, Ph.D.
[Professor, Environmental Energy Materials, jungho@jnu.ac.kr]

• Sung-June Cho, Ph.D.
[Professor, Production and Storage of Methane and Hydrogen, sjcho@jnu.ac.kr]

• Chang-Hyun Ko, Ph.D.
[Professor, Synthesis and Catalytic, Application of Inorganic Materials, chko@jnu.ac.kr]

• Young-Si Jun, Ph.D.
[Associate Professor, Photocatalysis, Polymer semiconductors

• Seung-Hoon Han, Ph.D.
[Professor, Architectural Planning & Design, hshoon@jnu.ac.kr]

• Sang-Yun Yun, Ph.D.
[Professor, Power System, drk9034@jnu.ac.kr]

• Dong-Hee Kim, Ph.D.
[Associate Professor, Energy Mechatronics, kimdonghee@jnu.ac.kr]

• In-Ho Park, LL.M.
[Professor, Commercial Law, ihpark12@jnu.ac.kr]

• Eun-Hee Kim, Ph.D
[Professor, Technology Management, eheekim@jnu.ac.kr]

■ Degree Requirements

Students are required to earn 130 credits, normally over a period of 4 years (8 semesters).

■ What Do You Study?

▌ Core Courses
Understanding of Science History
English for Global Communication 1
General Physics 1
General Chemistry 1

▌ Electives
Crystal Structures and Defects
Renewable Energy
Energy Science and Technology
Organic Chemistry 1
Materials Science
MATLAB Programing
Chemical Process Calculation 2
Physical Chemistry 2
Energy and Intellectual Property
Organic Chemistry 2
Environmental Reaction and Design Engineering
Introduction to IT Convergence Engineering
Solid State Chemistry
Coping Engineering with Air Pollution and Climate
Change
Design of Combustion Facilities
Electrochemistry
Chemistry of Interface

Inorganic Materials
Energy Storage System Engineering
Convergence Materials Testing
Electrical Energy Storage Systems
Management of Technology and Innovation
Capstone for new energy industry and IP
convergence
Capstone for future energy and SW convergence
Environmental Electrochemistry
Technology Management
Capstone for future energy and ICT convergence
Power Distribution System Engineering
Recent technical trends in Smart Grid
Energy Materials
Materials Electrochemistry
Power System Operation Practice

▌ Minor Courses
Chemical Process Calculation 1
Physical Chemistry 1
The next-generation electricity system engineering 1
The next-generation electricity system engineering 2
Smart Power System Engineering1
Environmental Energy Engineering and Practice

Major in
Bigdata Financial
Engineering
Convergence

__Contact Information
Phone: +82-62-530-4206
Fax: +82-62-530-4208
URL: http://cvg.jnu.ac.kr

■ What is Major in Bigdata Financial Engineering Convergence?

Students learn breadth of knowledge that data scientists should have: (1) learn how to handle and how to analyse financial bigdata (2) learn to understand complex financial problem in the context of financial engineering (3) learn how to solve the complex problem (4) learn to predict contemporary financial risk beforehand and to provide corresponding solution.

■ Professors

• JangSun Baek, Ph.D.
[Professor, Nonparametric Function Estimation, Multivariate Analysis, Bioinformatics, jbaek@jnu.ac.kr]

• IlSu Choi, Ph.D.
[Professor, Bayesian Statistics (MCMC), Mathematical Biology, Environmental Ecology Statistics, ichoi@jnu.ac.kr]

• MinSoo Kim, Ph.D.
[Professor, Multivariate Analysis, Image Partition or Searching, Financial Statistics.

kimms@jnu.ac.kr]

• Jaesik Jeong, Ph.D.
[Associate Professor, Bioinformatics (Metabolomics, Genomics), Biostatistics (clinical trials), Bayesian analysis, jjs3098@jnu.ac.kr]

• BongGyun Ko, Ph.D.
[Associate Professor, interpretative public intelligence, bonggyun.ko@jnu.ac.kr]

• Jeong-Gyu Huh, Ph.D.
[Assistant Professor, Machine-learning-based financial engineering, huhjeonggyu@jnu.ac.kr]

■ Degree Requirements

Students are required to earn 130 credits, normally over a period of 4 years (8 semesters).

■ What Do You Study?

▌ Core Courses
Scientific thinking with big data
Understanding of Practical Finance
Introduction to Statistics and Practice

▌ Electives
Management Information and Big Data
Financial Statistics and Practice
Financial Mathematics for beginner

Bigdata programming and practice
Exploratory Data Analysis
C Programming & Practice
JAVA Programing and Lab.
Econometrics
Quantitative Analysis for beginning
Big Data Process and Lab
Money and Banking

C++ Programing and Lab.

Finance and Banking Economics

Financial Derivatives Modeling

Data Base Systems

Bigdata Financial Modeling 1

Regression Analysis and Lab.

International Finance

International Finance Management

Financial Market Analysis

Machine Learning Introduction

Multiplicate Statistical Analysis and Lab.

Data Mining and Lab.

Digital Economics

Economics of Insurance

Insurance

Bigdata Financial Modeling 2

Big Data Analysis and Lab

Big Data Statistical Analysis

Web Programing and Lab.

Advanced Artificial Intelligence

Financial Institution Management

Financial practice

Finance Programming

Deep Learning Principles and Exercises

Big data Capstone design

Time Series Analysis and Lab.

Market risk management

Artificial Intelligence

Exploratory Bigdata Analysis

Financial Practice Capstone Design

Credit risk management

Stock Market Statistical Analysis

Options, Futures, And Other Derivatives

▌ Minor Courses

Macroeconomic Theory

Microeconomic Theory

Mathematical Statistics 1

Mathematical Statistics 2

Financial Management

Investment Theory

Investment Theory

Major in
IoT Artificial
Intelligence
Convergence

__Contact Information
Phone: +82−62−530−4206
Fax: +82−62−530−4208
URL: http://cvg.jnu.ac.kr

■ What is Major in IoT Artificial Intelligence Convergence?

For the purpose of training students as AI convergence talents, this major provides the fundamentals of Artificial Intelligence(AI) in the era of the fourth industrial revolution such as Deep learning and the applied AI technologies specialized for various industries including Internet of Things (IoT).

■ Professors

- Soohyung Kim, Ph.D.
  [Professor, shkim@jnu.ac.kr]
  (Artificial intelligence)
- Hyungjeong Yang, Ph.D.
  [Professor, hjyang@jnu.ac.kr]
  (Application software)
- Kyungbaek Kim, Ph.D.
  [Professor, kyungbaekkim@jnu.ac.kr]
  (Distributed Network System)
- DongHan Ham, Ph.D.
  [Professor, dhham@jnu.ac.kr]
  (Knowledge Service Engineering & Human Computer Interaction)
- Kwanghoon Choi, Ph.D.
  [Professor, kwanghoon.choi@jnu.ac.kr]
  (Programing Language & compiler)
- Hieyong Jeong, Ph.D.
  [Associate Professor, h.jeong@jnu.ac.kr]
  (Intelligence Robotics & Signal Processing)
- SunYong Yoo, Ph.D.
  [Assistant Professor, intelligence information system, syyoo@jnu.ac.kr]

- HyunDuck Choi, Ph.D.
  [Assistant Professor, ducky.choi@jnu.ac.kr]
  (Next Generation Intelligent Control)
- Seokbong, Yoo, Ph.D.
  [Associate Professor, sbyoo@jnu.ac.kr]
  (Visual intelligence, Image and Video Processing)
- YeongJun Cho, Ph.D.
  [Assistant Professor, yj.cho@jnu.ac.kr]
  (computer vision)
- MyungHwan Na, Ph.D.
  [Professor, nmh@chonnam.ac.kr]
  (Artificial Intelligence Bigdata Analysis)
- SeulGi Joung, Ph.D.
  [Assistant professor, sgjoung@jnu.ac.kr]
  (Optimization under uncertainty & Applications of OR)
- SeungWon Kim, Ph.D.
  [Assistant Professor, Seungwon.Kim@jnu.ac.kr]
  (AR/VR)
- TaeJune Park, Ph.D.
  [Assistant Professor, taejune.park@jnu.ac.kr]
  (Information Security/Network)

■ Degree Requirements

Students are required to earn 130 credits, normally over a period of 4 years (8 semesters).

■ What Do You Study?

▌ Core Courses
Computational Thinking for Engineering
Intellectual Property Right
Introduction to Statistics and Practice

▌ Electives
Linux System
Discrete Mathematics
Artificial Intelligence based projects
Artificial Intelligence Mathematics 1
JAVA Programing and Lab.
Seminar1
Artificial Intelligence design project
Artificial Intelligence Mathematics 2
Information Systems Analysis and Design
C++ Programing and Lab.
Data Base Systems
Design Engineering
Problem Solving Project
Seminar2
Operating System
Network Programming
Big Data Statistical Analysis

Algorithms
Web Programing and Lab.
Cognitive science and system
IoT Stream Data Analysis
Advanced Artificial Intelligence
Digital Image Processing
Deep Learning Principles and Exercises
Computer & Networks Security
IoT Case Study
Mobile Application Software
Smart Grid
Pattern Recognition
Field Practice

▌ Minor Courses
C Programming & Practice
Open Source SW Development Theory
Data Structures
Theory of Software Engineering
Machine Learning Introduction
Artificial Intelligence Convergence Project(Capstone Design)

__Contact Information__
Phone: +82-62-530-4205
Fax: +82-62-530-4208
URL: http://cvg.jnu.ac.kr

■ What is Major in Intelligent Mobility Convergence Engineering?

Intelligent mobility, the core of the 4th industrial revolution, refers to automobiles and transportation means incorporating artificial intelligence. Eco-friendly vehicles are developing into high-efficiency and smart automobiles. For this purpose, eco-friendly powertrain and functional composite materials, electronic, Exploring not only the core of computer and electrical engineering, but also convergence disciplines widely related to engineering

■ Professors

• Chunhwan Lee, Ph.D.
[Professor, Control
Powertrain System Control& Vehicle
Dynamic Modeling & chunhwan@jnu.ac.kr]
• Gyuhae Park, Ph.D.
[Professor, Smart Material/sensor/actuator,
gpark@jnu.ac.kr]
• Lee, Wonoh, Ph.D.
[Associate Professor, Composite Materials /
Mechanics of Inelastic Materials]
• Chansoo Kim, Ph.D.
[Assistant Professor, Autonomous driving,
chansoo.kim@jnu.ac.kr]
• Woohyun kim, Ph.D.
[Assistant Professor, Modeling, analysis
and control of thermal systems]
• Moon, Chang-bae, Ph.D.
[Assistant Professor, Mobile Robot
/ Autonomous Vehicle, cbmoon@jnu.ac.kr]

• Hyun Wook Kang, Ph.D.
[Professor, Micro Fluidics, Nano
Technology and System, kanghw@jnu.ac.kr]
• Jinsoo Park, Ph.D.
[Assistant Professor, Microfluidics / Flow Visualization,
jinsoopark@jnu.ac.kr]
• Jaehyung Park, Ph.D.
[Professor, Network Technology]
• Myoungjin Lee, Ph.D.
[Professor, Semiconductor device & Circuit
design, mjlee@jnu.ac.kr]
• Sungjune Baek, Ph.D.
[Professor, Digital Signal Processing]
• Lee, Joon-Woong, Ph.D.
[Professor, Computer Vision &
Software Development for Autonomous Vehicles,
joonlee@jnu.ac.kr]
• Kyeong-Hwan Lee, Ph.D.
[Professor, Sensors and Intelligent   Biosystems,
khlee@jnu.ac.kr]

■ Degree Requirements

Students are required to earn 130 credits, normally over a period of 4 years (8 semesters).

■ What Do You Study?

▌ Core Courses

General Physics 1
C Programming

▌ Electives

Thermodynamics
Circuit Theory 1
Engineering Mathematics 1
Basics of computer programming
Renewable Energy
Solid Mechanics
Fluid Mechanics
Signals and System Engineering
Electronic Circuit 1
Application of C Programming
Dynamics
Numerical Analysis
Precision Agricultural Engineering
Control Engineering
Computing Algorithm
Measurement Engineering
Fuel and Combustion Engineering
Heat Transfer
System Dynamics and Signal Processing
Smart Automobile & IoT
Mechanical Vibrations

Advanced Computer Programming & Practice
Digital Image Processing
Mobile Communication System
Artificial intelligence and applications
Internal Combustion Engine
Intelligent Vehicle
Agricultural Mobility System
Embeded System
Automotive Multimedia System
Air Conditioning and Refrigeration
Environment-Friendly Vehicles
Vehicle Dynamics and Control
Intelligence Vehicle Networks
Smart Vehicle System
Product development engineering
Hydraulic Engineering
Fuel Cell Vehicles
Automotive and Environmental Engineering

▌ Minor Courses

Introduction of electricity and electronics
Introduction to Automotive Engineering
Introduction To Automobile
Artificial Intelligence
Project Lab 1
Project Lab 2

Major of Intelligent &
Immersive Media
Convergence

__Contact Information
Phone: +82-62-530-4206
Fax: +82-62-530-4208
URL: http://media.jnu.ac.kr

■ What does Majoring in Intelligent Mobility Convergence Engineering entail?

The convergence of intelligence and immersive media content is focused on the development of cultural technology to create novel media content. The primary goal is to gain proficiency in cutting-edge technologies such as AR, VR, XR, artificial intelligence, and big data, thus enabling the creation and production of engaging media content for human development and for the betterment of our society. To achieve this objective, this field of study encompasses diverse curricula including engineering, humanities, society, and education.

■ Professors

- Chung Min Joo, Ph.D.
  [Professor, Broadcasting, new media, media content, truejoo77@jnu.ac.kr]
- Chil-Woo Lee, Ph.D.
  [Professor, Computer vision, human interface, leecw@jnu.ac.kr]
- JinSul Kim, Ph.D.
  [Professor, Multimedia, future computing, intelligent platform, jsworld@jnu.ac.kr]
- JaeYeol Lee, Ph.D.
  [Professor, HCI&Design, AR/VR, Smart factory jayeol@jnu.ac.kr]
- Jeeheon Ryu, Ph.D.
  Professor, Education engineering, multimedia design, jeeheon@jnu.ac.kr]
- ByoungIn Kim Ph.D.
  [Professor, historiography, Honam studie, history and cultural planning, kimbi36@jnu.ac.kr]
- Khoung-Soo Kim, Ph.D.
  [Professor, Multimedia design, media content, ks@jnu.ac.kr]

- Hieyoung Jeong, Ph.D.
  [Associate Professor, Biomechanics, robotics, h.jeong@jnu.ac.kr]
- Choonsung Shin, Ph.D.
  [Associate Professor, HCI, Cultural content & technology, AR/VR, cshin@jnu.ac.kr]
- Trina Hyunjin Byun, Ph.D.
  [Associate Professor, Media art, digital art, aawoo@jnu.ac.kr]
- Yeong-Jun Cho, Ph.D.
  [Assistant Professor, Computer vision, pattern recognition, yj.cho@jnu.a.kr]
- JungHo Jeong, Ph.D.
  [Associate Professor, Design convergence, service design, vava@jnu.ac.kr]
- JiSue Lee, Ph.D.
  [Assistant Professor, Information behavior, recording administration, jislee@jnu.ac.kr]
- Seungwon Kim Ph.D.
  [Assistant Professor, Augmented & virtual reality, Seungwon.Kim@jnu.ac.kr]

■ Degree Requirements

Students are required to earn 130 credits, normally over a period of 4 years (8 semesters).

■ What Do You Study?

▌ Core Courses

Computational thinking for engineering

Basic Statistics

Immersive Media Convergence

C Programming & Practice

Virtual reality and augmented reality

Artificial Intelligence

XR Metaverse Capstone

▌ Electives

Media Convergence Content Design

Linear Algebra

Data Structures

JAVA Programing and Practice

Digitalmedia and Society

Understanding historical and cultural resources

Opensource Software

Advanced python programming

Metaverse & Virtual World

Media Storytelling

Planning historical and cultural resources

Computer Graphics

IoT System

XR Programming

Game Programming

Digital Information Service and Immersive Media

Deep Learning

Interaction Programming

Human Interface Engineering

xyz MetaDesign

Game Software

Spatial computing

Extended Reality Media Project

Curation of historical and cultural resources

Visual Communication

3D Animation

Mobile Application Software

Immsersive media and education

Convergence media planning and production

Audio Processing

AI-XR convergence project