

국 민 대 학 교

■ 주소 : 서울특별시 성북구 정릉로 77

■ 웹사이트 : www.kookmin.ac.kr

I. 연구개발(R&D) 과정 소개

- 국민대학교는 1946년 9월에 설립되어 현재 14개의 단과대학과 53개의 학부(과)와 15개의 대학원(일반대학원, 3개의 전문대학원, 11개의 특수대학원)을 운영하고 있습니다. 외국인 유학생은 학부 1,337명, 대학원 901명이 재학 중입니다. 국민대학교는 대한민국의 수도 서울 중심부에 위치하고 있어, 서울 주요 관광지와 인접하고 있습니다.
- 전략적 첨단 산업 분야 인재 유치 및 양성을 위하여 해당 분야 연구개발 중심의 교육과정을 운영하고, 진로·취업 연계 지원을 위한 연구기관 및 산업체 등 현장 경험을 제공하며 이론과 실무를 겸비한 전문적인 인재 양성 및 순환을 통해 국가 간 교류를 추진하고 있습니다.
- 정부초청장학생에게는 등록금 전액을 지원하며(학기당 등록금이 500만 원을 초과할 경우), 학위 과정 중 교내 무료 기숙사가 제공됩니다. 정부초청장학생을 위한 전용 문화 체험 프로그램과 정기 간담회 및 동문회를 실시하여 학생 간의 네트워크를 형성하고, 상호 지원할 수 있는 기회를 마련합니다.

II. R&D 과정 모집 학과

○ 모집 학과

학과	전공	지원과정	모집인원 수
전자공학과	전자공학전공	석사과정 또는 박사과정	15명 이내
	에너지ICT융합전공		
기계공학과	기계공학전공	석사과정 또는 박사과정	15명 이내
건설시스템공학과	구조공학전공	석사과정 또는 박사과정	10명 이내
	지반공학전공		
	수공학전공		
	환경공학전공		
	지진방재공학전공		

▣ 전자공학과

1. 학과 소개

전자공학과는 무선통신 및 인공지능연구실, 스마트그리드연구실, 시스템집적회로연구실, 인공지능연구실, 반도체 및 집적회로 연구실, 통신시스템연구실 등의 실험실이 있으며, 차별화된 교수진 및 교육 커리큘럼을 제공함으로써 21세기 AI+X 첨단기술 산업에 기여할 수 있는 인력을 양성하고 있습니다.

● 무선통신 및 인공지능연구실(장영민 교수)

- 빅데이터 · AI · IoT 기반 에너지ICT 플랫폼 및 응용기술 연구
- Edge/Cloud server 및 Device 에너지 효율성 및 드론 에너지관리시스템 개발

● 스마트그리드연구실(정일엽 교수)

- 신재생에너지 연계 송 · 배전망, 마이크로그리드, 선박 전력계통 연구
- AI 기반 전력계통 운영 · 관리 시스템 개발

● 시스템집적회로연구실(민경식 교수)

- 에너지 효율적인 AI 반도체 설계
- 공정 불량 · 변이 대응 신경망 학습 방법 연구

● 인공지능실험실(이수찬 교수)

- 컴퓨터비전 중심의 기계학습 연구
- 멀티모달 대형 언어모델(MLLM), 지식 기반 경량형 AI 모델 개발

● 반도체 소자 및 집적 회로 연구실(김대환 교수)

- 차세대 로직 · 메모리 · 센서 · 디스플레이 · AI 연산용 하드웨어 가속기 연구
- DTCO, STCO, 디지털 헬스케어용 반도체 소자 및 회로 개발

● 통신시스템연구실(김태형 교수)

- 6G, V2X, NTN 및 저전력 IoT를 위한 AI기반 저전력 물리계층
- 3GPP RAN1 표준화 경험 기반 6G 핵심 기술 개발

2. 교과과정표

○ 공통전공

교과목명	학점-강의-실습	교과목명	학점-강의-실습
메카트로닉스	3-3-0	정보보안	3-3-0
차량용 전력 전자 프로그래밍	3-3-0	컴퓨터네트워크보안	3-3-0
고급전력전자공학	3-3-0	AI전력반도체소자	3-3-0
지능형전력시스템제어	3-3-0	AI전력반도체설계	3-3-0
DSP응용	3-3-0	연구윤리와논문연구	3-3-0
임베디드 제어 프로그래밍	3-3-0	차량용임베디드소프트웨어	3-3-0
반도체특성	3-3-0	IT지식재산권특론	3-3-0
무선네트워크	3-3-0	IT지식재산창출과활용	3-3-0
지능형SoC설계	3-3-0	고급센서공학	3-3-0

교과목명	학점-강의-실습	교과목명	학점-강의-실습
혼성모드집적회로	3-3-0	AI메모리소자공학	3-3-0
선형시스템이론	3-3-0	고급디스플레이공학	3-3-0
디지털신호처리	3-3-0	반도체를 위한 인공지능 기초	3-3-0
차량용 네트워크 프로그래밍	3-3-0	효과적인 기술논문 작성법	3-3-0
전기자동차 최적 제어	3-3-0	자율연구 설계 및 수행	3-3-0
회로망합성과 필터설계	3-3-0	드론 시스템 설계	3-3-0
마이크로파회로설계	3-3-0	인공지능수학및최적화	3-3-0
디지털영상처리	3-3-0	컴퓨터비전특론	3-3-0
디지털통신시스템	3-3-0	기계학습및심층학습	3-3-0
AI디지털회로설계	3-3-0	자율로봇내비게이션	3-3-0
디지털통신공학	3-3-0	차세대이동통신	3-3-0
차량용 소프트웨어 플랫폼 응용 설계	3-3-0	AR/VR/XR	3-3-0
정보및부호이론	3-3-0	차량용통신특론	3-3-0
운영체제	3-3-0	임베디드C프로그래밍	3-3-0
CMOSRF집적회로	3-3-0	임베디드C++프로그래밍	3-3-0
반도체소자특성측정기술	3-3-0	차량용네트워크	3-3-0
아날로그집적회로설계	3-3-0	OTA및자율주행을위한 차량소프트웨어플랫폼	3-3-0
고전력소자를 이용한 스위칭 회로	3-3-0	차량제어소프트웨어플랫폼	3-3-0
전력전자시스템	3-3-0	소프트웨어공학	3-3-0
고효율전력시스템	3-3-0	UML기반차량시스템설계	3-3-0
임베디드 소프트웨어	3-3-0	미래형자동차SW특론	3-3-0
광무선통신공학	3-3-0	미래형자동차현장실습1	3-1-3
차세대이동통신시스템	3-3-0	미래형자동차현장실습2	3-1-3
NTN위성통신(구 위성통신시스템)	3-3-0	소프트웨어정의차량특론	3-3-0
3차원 컴퓨터 비전	3-3-0	차량용네트워크응용서비스	3-3-0
UML 모델링	3-3-0	SDV프로그래밍	3-3-0
차량 전자 제어 프로그래밍	3-3-0	인공지능프로세서프로그래밍	3-3-0
임베디드소프트웨어특론	3-3-0	강화학습및응용	3-3-0
임베디드실시간운영체제	3-3-0	미래형자동차SDV특론	3-3-0
지능형로봇특론	3-3-0	차량용소프트웨어업데이트 설계	3-3-0
지능인식및위치 추적	3-3-0	OTA및인공지능플랫폼기반 응용설계	3-3-0
LED구동시스템	3-3-0	차량용소프트웨어융합설계	3-3-0
AI디지털시스템설계	3-3-0	차량용인공지능응용서비스	3-3-0

교과목명	학점-강의-실습	교과목명	학점-강의-실습
		설계	
초저전력통신공학	3-3-0	미래형자동차현장심화실습	3-1-3
광대역통신	3-3-0	미래형자동차현장융합실습	3-1-3
집적회로공정기술	3-3-0	AI레이다공학	3-3-0
지능시스템특론	3-3-0		

○ 전자공학전공

교과목명	학점-강의-실습	교과목명	학점-강의-실습
저전력집적회로설계	3-3-0	고급반도체소자	3-3-0
메모리회로설계	3-3-0	디지털영상처리특론	3-3-0
고급집적회로설계	3-3-0	제어공학특론	3-3-0
이산사건시스템모델링및시뮬레이션	3-3-0	멀티미디어공학	3-3-0
알고리즘	3-3-0	디지털신호처리특론	3-3-0
네트워크 프로그래밍	3-3-0	마이크로프로세서특론	3-3-0
역률개선회로특론	3-3-0	정보보호개론	3-3-0
선형제어시스템	3-3-0	AI디지털회로설계	3-3-0
차량용전력전자시스템	3-3-0	블록체인과 암호학	3-3-0
마이크로그리드 최적설계및운영	3-3-0	스마트 컨트랙트	3-3-0
반도체소자물성및특성특론	3-3-0	응용 암호	3-3-0

○ 에너지ICT융합전공

교과목명	학점-강의-실습	교과목명	학점-강의-실습
무선광대역통신특론	3-3-0	지능에너지시스템	3-3-0
적응신호특론	3-3-0	신재생에너지 시스템	3-3-0
광통신공학특론	3-3-0	에너지시스템 설계	3-3-0
전원공급기필터설계	3-3-0	에너지 비즈니스 모델	3-3-0
AI센서네트워크	3-3-0	ICT융합 실무 I-3	3-1-5
AI디바이스플랫폼	3-3-0	ICT융합 실무 II-3	3-1-5
디지털통신시스템특론	3-3-0	에너지관리시스템	3-3-0
무선네트워크특강	3-3-0	인공지능통신	3-3-0
전력변환회로설계특론	3-3-0	AI데이터센터	3-3-0
단일전력단전력변환회로	3-3-0	기계학습	3-3-0
다중안테나기술특론	3-3-0	신경망	3-3-0
무선에너지 기술	3-3-0	고급심층학습	3-3-0

교과목명	학점-강의-실습	교과목명	학점-강의-실습
CAD활용무선통신회로설계	3-3-0	인공지능특론	3-3-0
디지털RF기술	3-3-0	IoT 플랫폼	3-3-0
무선에너지전송기술	3-3-0	빅데이터플랫폼	3-3-0
무선통신필터설계이론	3-3-0	인공지능플랫폼	3-3-0
방송통신네트워크특론	3-3-0	인공지능개론	3-3-0
전력시스템제어및안정도	3-3-0	전자파공학특론	3-3-0
스마트그리드공학특론	3-3-0	이동통신공학특론	3-3-0
풍력발전용전력변환시스템	3-3-0	멀티모달센서퓨전	3-3-0
태양광발전용전력변환시스템	3-3-0	AI통신네트워크	3-3-0
에너지AI	3-3-0	양자AI	3-3-0
지능형사물인터넷	3-3-0	양자컴퓨팅및정보이론	3-3-0
에너지 네트워크 분석 및 최적화	3-3-0	양자통신시스템	3-3-0
에너지ICT	3-3-0		

▣ 기계공학과

1. 학과 소개

기계공학은 산업 전반의 핵심 기반 기술로서, 자동차, 로봇, 항공우주, 에너지, IT 등 첨단 분야에 이르기까지 광범위하게 적용되고 있습니다. 국민대학교 기계공학부는 기초에 강한 공학 교육, 미래를 대비하는 융합 연구, 사회와 산업에 기여하는 실천적 인재 양성을 목표로, 지속 가능한 기술 발전과 사회적 가치 창출에 앞장서고 있습니다. 열·유체, 고체역학, 동역학, 제어, 설계 등 전통적 기계공학의 핵심 분야를 탄탄히 교육하는 동시에, 친환경 에너지, 미래 모빌리티, 로봇·항공, 스마트 제조, 디지털 엔지니어링 등 급변하는 기술 환경에 부합하는 융합 교육을 강화하고 있습니다.

2. 교과과정표

교과목명	학점-강의-실습	교과목명	학점-강의-실습
유체역학특론	3-3-0	지능형설계특론	3-3-0
열역학특론	3-3-0	로봇메커니즘응용설계	3-3-0
열동력특론	3-3-0	초소형기전공학특론	3-3-0
가스터빈특론	3-3-0	동역학시스템설계	3-3-0
기계공학특강	3-3-0	로봇제어	3-3-0
대류 및 복사열전달	3-3-0	회전체역학	3-3-0
기계공학세미나	3-3-0	진동설비진단	3-3-0
생체모방공학	3-3-0	AI 센서공학	3-3-0

교과목명	학점-강의-실습	교과목명	학점-강의-실습
신재생열원	3-3-0	논문연구1	3-3-0
시뮬레이션소프트웨어	3-3-0	논문연구2	3-3-0
HVAC설비특론	3-3-0	레이저 원리 및 응용	3-3-0
마이크로열유체공학특론	3-3-0	특수가공론	3-3-0
다상유동	3-3-0	연료전지개론	3-3-0
바이오의료기기	3-3-0	나노재료구조특론	3-3-0
응용수학특론	3-3-0	접촉역학	3-3-0
생체공학	3-3-0	표면공학특론	3-3-0
나노공학	3-3-0	인공지능 기반 항공우주 유도제어	3-3-0

교과목명	학점-강의-실습	교과목명	학점-강의-실습
지능형 메카트로닉스	3-3-0		
복합재료 제조공정	3-3-0		
로봇제어특론	3-3-0		
동역학제어시스템	3-3-0		
항공우주고급유도제어	3-3-0		
기계공학연구	3-3-0		
열전달특론	3-3-0		
에너지공학특론	3-3-0		

■ 건설시스템공학과

1. 학과 소개

건설시스템공학과는 도로, 철도, 교량, 터널, 항만, 공항 건설을 비롯하여 다목적 댐, 수자원 관리 시스템, 에너지, 환경 플랜트 등 인프라 구축 과정에서 발생하는 다양한 과제들을 해결하는 데 주력하고 있습니다. 최근 우리 학과의 교육과정은 학제적 관점을 바탕으로 한 스마트 건설 중심으로 개편되었습니다. 명성 있는 교수진과 첨단 설비를 갖춘 연구실을 바탕으로, 우리는 스마트 건설의 발전을 선도할 교육과 연구를 수행할 모든 준비를 마쳤습니다.

2. 교과과정표

○ 구조공학 전공

교과목명	학점-강의-실습	교과목명	학점-강의-실습
구조역학특론	3-3-0	복합소재구조특론	3-3-0
건설재료학특론	3-3-0	PS콘크리트특론	3-3-0

교과목명	학점-강의-실습	교과목명	학점-강의-실습
콘크리트구조설계특론	3-3-0	구조안정론	3-3-0
강구조특론	3-3-0	판밋셀이론	3-3-0
실험기반응력해석	3-3-0	구조역학특수과제	3-3-0
교량공학특수과제	3-3-0	구조공학특수과제	3-3-0
탄성론	3-3-0	냉간성형강구조물설계	3-3-0
구조동역학	3-3-0	비파괴해석	3-3-0
유한요소해석	3-3-0	내진설계	3-3-0
파괴역학	3-3-0		

○ 지반공학 전공

교과목명	학점-강의-실습	교과목명	학점-강의-실습
지반공학특론	3-3-0	지반굴착공학	3-3-0
토질역학특론	3-3-0	기초문제연구	3-3-0
기초공학특론	3-3-0	지하공간개발 프로젝트관리	3-3-0
지반조사기법	3-3-0	스마트건설관리특론	3-3-0
토질수치해석	3-3-0	건설사업관리특론	3-3-0
지반개량공법	3-3-0	건설환경연구방법론	3-3-0
토질동역학	3-3-0	건설사업관리논문연구	3-3-0
암석역학	3-3-0		

○ 수공학 전공

교과목명	학점-강의-실습	교과목명	학점-강의-실습
개수로	3-3-0	부정류해석	3-3-0
계산수리학	3-3-0	수공모델	3-3-0
수문학특론	3-3-0	AI기반스마트수공학연구	3-3-0
수리동역학	3-3-0	수리과정연구	3-3-0
빅데이터기반의자연재해해석	3-3-0	AI빅데이터와수자원	3-3-0
수자원시스템	3-3-0	AI활용유역해석기술	3-3-0
추계수문학	3-3-0	기후변화복합재난모델링 및 적용기술	3-3-0
지하수이론	3-3-0		

○ 환경공학 전공

교과목명	학점-강의-실습	교과목명	학점-강의-실습
상하수도공학특론	3-3-0	하수처리시설설계	3-3-0
하수처리학특론	3-3-0	수질환경보전	3-3-0
수질오염	3-3-0	폐수처리시설설계	3-3-0
상수도배수관망설계	3-3-0	폐기물처리시설설계	3-3-0
하수배수계통설계	3-3-0	수질오염연구	3-3-0
산업폐수처리	3-3-0	환경시스템데이터분석과응용	3-3-0
오염문제연구와스마트기술	3-3-0	스마트수도시설해석	3-3-0
환경문제연구	3-3-0	기후변화와 대체수자원	3-3-0
상수도정수시설설계	3-3-0		

○ 지진방재공학 전공

교과목명	학점-강의-실습	교과목명	학점-강의-실습
내진데이터공학	3-3-0	내진신뢰성해석	3-3-0
구조물기초내진설계	3-3-0	산업시설내진설계	3-3-0
스마트내진지반공학	3-3-0		

III. R&D 과정 지원 방법

1. 일정

○ 접수 및 심사 기간(예정) : 2026년 2월 27일 ~ 2026년 3월 31일

※ “대학 웹사이트” 에 확정 일정 공지 예정

(<https://iat.kookmin.ac.kr/admission>)

2. R&D 과정 제출서류

○ 제출서류

구분	서류 목록	석사	박사	연구과정
작성 서류	(Form 1) 지원서	필수	필수	필수
	(Form 2) 자기소개서	필수	필수	필수
	(Form 3) 학업계획서	필수	필수	
	(Form 4) 연구계획서(연구과정 지원자)			필수
	(Form 5) 추천서 1부	필수	필수	필수
	(Form 6) 초청장 (연구과정 초청대학에서 발급)			필수
	(Form 7) 지원자 동의서	필수	필수	필수
	(Form 8) 자가건강진단서	필수	필수	필수
	(Form 9) 개인정보 수집·이용 동의서	필수	필수	필수
증명 서류	학사 졸업증명서	필수	필수	필수
	학사 성적증명서	필수	필수	필수
	석사 졸업증명서		필수	필수

	석사 성적증명서		필수	필수
	박사 졸업증명서(박사 후 연구과정 지원자)			필수
	박사 성적증명서(박사 후 연구과정 지원자)			필수
	경력 증명서(전문가 연구과정 지원자)			필수
	국적 증빙서류(지원자 및 부모) 및 가족관계 증명 서류	필수	필수	필수
	재외동포 또는 입양 증명서류	해당자	해당자	해당자
	한국국적 이탈 또는 상실 증명 서류(지원자 및 부모)	해당자	해당자	해당자
	한국전참전용사 증명 서류 및 가족관계 증명 서류	해당자	해당자	해당자
	현직 교원 지원자 제출 서류 ① 재직증명서(담당과목 명시) ② 교직경력증명서	해당자	해당자	
	예비 교원 지원자 제출 서류 ① 교원양성과정 이수증(이수과목 명시) 또는 교원자격증	해당자	해당자	
기타 서류	유효한 TOPIK 성적표(원본) 또는 공인영어 성적표	해당자	해당자	해당자
	출간된 서적, 논문, 수상내역 등(복사본)	해당자	해당자	해당자
	여권(복사본)	해당자	해당자	해당자

○ 제출방법 : 우편 또는 방문 접수

3. 문의 및 서류발송처

○ 대학 담당자 연락처(문의)

- 연 락 처 : (Tel) 82-2-910-5835 (Fax) 82-2-910-5830
- 이 메 일 : gksa@kookmin.ac.kr
- 홈페이지 : iat.kookmin.ac.kr

○ 대학 주소(서류발송처)

- (02707) 서울특별시 성북구 정릉로 77 국민대학교 국제교류팀 (글로벌센터 202호)

4. 주의사항

- 한국 내 고등학교(외국인학교 포함), 대학 또는 대학원을 졸업한 자는 지원 불가(예외: 해외입양인, 기 수혜 GKS 장학생)
- 전형 내 중복 지원 불가

KOOKMIN UNIVERSITY(KMU)

- Address : 77, Jeongneung-ro, Seongbuk-gu, Seoul 02707, Korea
- Website : www.kookmin.ac.kr

I. Overview of R&D Program

○ Kookmin University was established in September 1946 and currently operates 14 colleges, 53 departments, and 15 graduate schools. There are 1,337 undergraduate and 901 graduate international students enrolled. Kookmin University is located in the heart of Seoul, close to major tourist attractions.

○ R&D Program provides R&D-focused curriculum and field experience in research institutes and industries. It is to attract and nurture talented scholars in the strategic high-tech industry and to be beneficial to individual's future career. It is designed to promote educational exchange between nations by training and dispatching them who are equipped with theoretical and practical knowledge.

○ The selected GKS scholars receive full tuition support (if tuition exceeds 5 million won per semester) and are provided with free on-campus accommodation during their degree program. Exclusive cultural experience programs and regular meetings and alumni gatherings are organized to foster networking.

II. Fields of Study

Department	Major	Courses	Quota
Electronics Engineering	Electronics Engineering Major	Master or Doctoral	15
	Energy ICT Convergence Major		
Mechanical Engineering	Mechanical Engineering Major	Master or Doctoral	15
Civil and Environmental Engineering	Structural Engineering Major	Master or Doctoral	10
	Geotechnical Engineering Major		
	Hydraulic Engineering Major		
	Environmental Engineering Major		
	Engineering of Seismic Disaster Prevention Major		

■ Electronics Engineering

1. Introductions

Electronics Engineering major has laboratories such as the Wireless Communication and Artificial Intelligence Laboratory, Smart Grid Research Laboratory, System Integrated Circuit Laboratory, Artificial Intelligence Laboratory, Semiconductor and Integrated Circuit Laboratory, and Communication Systems Laboratory. It cultivates human resources who can contribute to the 21st-century AI+X advanced technology industries by providing a differentiated faculty and educational curriculum.

- Wireless Communication and Artificial Intelligence Laboratory (Prof. Yeong Min Jang)
 - Research on Big Data, AI, and IoT-based Energy ICT platforms and application technologies
 - Development of energy efficiency technologies for edge/cloud servers and devices, and drone energy management systems
- Smart Grid Laboratory (Prof. Il-Yop Jeong)
 - Research on transmission and distribution networks linked with renewable energy, microgrids, and ship power systems
 - Development of AI-based power system operation and management systems
- System Integrated Circuit Laboratory (Prof. Kyung-Sik Min)
 - Research on energy-efficient AI semiconductor design
 - Research on neural network training methods robust to process defects and variations
- Artificial Intelligence Laboratory (Prof. Soochahn Lee)
 - Machine learning research focused on computer vision
 - Development of multimodal large language models (MLLMs) and knowledge-based lightweight AI models
- Semiconductor Devices and Integrated Circuits Laboratory (Prof. Dae Hwan Kim)
 - Research on next-generation logic, memory, sensor, display, and AI computing hardware accelerators
 - Development of semiconductor devices and circuits for DTCO, STCO, and digital healthcare
- Communication Systems Laboratory (Prof. TaeHyoung Kim)
 - AI-based low-power physical layer technologies for 6G, V2X, NTN, and low-power IoT
 - Development of core 6G technologies based on experience in 3GPP RAN1 standardization

2. Curriculum

○ Common Major

Courses	Credits-theory -practices	Courses	Credits-theory -practices
Mechatronics	3-3-0	Information Security	3-3-0
Automotive Power Electronics Programming	3-3-0	Computer and Network Security	3-3-0

Courses	Credits-theory -practices	Courses	Credits-theory -practices
Advanced Power Electronics	3-3-0	AI Power Semiconductor Devices	3-3-0
Intelligent System Applications in Power Engineering	3-3-0	AI Power IC Design	3-3-0
DSP Applications	3-3-0	Research Ethics & Thesis Study	3-3-0
Embedded Control Systems	3-3-0	Automotive Embedded Software	3-3-0
Semiconductor Physics	3-3-0	Special Topic on IT IPR	3-3-0
Wireless Networks	3-3-0	Creation and Application of IT IP	3-3-0
Intelligent SoC Design	3-3-0	Modern Sensor Technique	3-3-0
Mixed-Mode Integrated Circuits	3-3-0	AI Memory Devices	3-3-0
Linear Systems Theory	3-3-0	Advanced Display Engineering	3-3-0
Digital Signal Processing	3-3-0	Fundamentals of Artificial Intelligence for Semiconductor Engineers	3-3-0
Vehicular Network Programming	3-3-0	How to Read and Write Technical Papers	3-3-0
Optimal Control for Electric Vehicle	3-3-0	Liberal and Exploratory Research Works	3-3-0
Network Synthesis and Filter Design	3-3-0	UAV System Design	3-3-0
Microwave Circuits Design	3-3-0	Mathmatics and Optimization in Artificial Intelligence	3-3-0
Digital Image Processing	3-3-0	Advanced Computer Vision	3-3-0
Digital Communication System	3-3-0	Machine Learning and Deep Learning	3-3-0
AI Digital Circuit Design	3-3-0	Autonomous Robot Navigation	3-3-0
Digital Communication Engineering	3-3-0	Next-Generation Mobile Communication	3-3-0
Application Design for Automotive Software Platform	3-3-0	Augmented Reality/Virtual Reality/Mixed Reality	3-3-0
Information and Coding Theory	3-3-0	Advanced Automotive Communication	3-3-0
Operating System	3-3-0	Embedded C Programming	3-3-0
CMOS RF Integrated Circuits	3-3-0	Embedded C++ Programming	3-3-0
Characterization of Semiconductor Materials and Devices	3-3-0	Vehicular Network	3-3-0

Courses	Credits-theory -practices	Courses	Credits-theory -practices
Analog Integrated Circuit Design	3-3-0	Automotive Software Platform for OTA and Automated Driving	3-3-0
High Power Switching Circuit	3-3-0	Automotive Software Platform	3-3-0
Power Electronics System	3-3-0	Software Engineering	3-3-0
High Efficiency Power System	3-3-0	Automotive System Design based on UML	3-3-0
Embedded Software	3-3-0	Advanced Future Automotive Software	3-3-0
Optical Wireless Communications	3-3-0	Practical Training for Future Vehicle 1	3-1-3
Next Generation Mobile Communication System	3-3-0	Practical Training for Future Vehicle 2	3-1-3
Non-Terrestrial Networks Satellite Communication	3-3-0	Advanced Software-Defined Vehicle	3-3-0
3D Computer Vision	3-3-0	Application Services for Vehicular Networks	3-3-0
UML Modeling	3-3-0	SDV programming	3-3-0
Automotive Electronics Control Programming	3-3-0	Advanced Programming for AI processor	3-3-0
Advanced Topics on Embedded Software	3-3-0	Reinforcement Learning and Applications	3-3-0
Embedded Real-Time Operating Systems	3-3-0	Advanced Future Automotive SDV	3-3-0
Advanced Topics on Intelligent Robots	3-3-0	Automotive Software Update Design	3-3-0
Intelligent Perception and Localization	3-3-0	Application Design for OTA and AI Platform	3-3-0
LED Drive System	3-3-0	Integration Design for Automotive Software	3-3-0
AI Digital System Design	3-3-0	Application Design for Automotive AI	3-3-0
Ultra low power communication engineering	3-3-0	Practical Training for Future Automotive Technologies	3-1-3
Broadband Communication Systems	3-3-0	Integrated Training for Future Automotive Technologies	3-1-3
Integrated Circuit Process Technology	3-3-0	AI Radar Engineering	3-3-0
Special Topic on Intelligence Systems	3-3-0		

○ Electronics Engineering Major

Courses	Credits-theory -practices	Courses	Credits-theory -practices
Low-Power Integrated-Circuit Design	3-3-0	Advanced Semiconductor Devices	3-3-0

Courses	Credits-theory -practices	Courses	Credits-theory -practices
Memory-Circuit Design	3-3-0	Advanced Digital Image Processing	3-3-0
Advanced Topics in Integrated Circuit Design	3-3-0	Advanced Control Engineering	3-3-0
Modeling and Simulation of Discrete Event Systems	3-3-0	Multimedia Engineering	3-3-0
Algorithms	3-3-0	Advanced Digital Signal Processing	3-3-0
Vehicular Network Programming	3-3-0	Special Topic on Microprocessor	3-3-0
Advanced Topics on PFC Circuits	3-3-0	Introduction to Information Security	3-3-0
Linear System Control	3-3-0	AI Digital Circuit Design	3-3-0
Automotive Power Electronics System	3-3-0	Blockchain and cryptography	3-3-0
Optimal design and operation of microgrid system	3-3-0	Smart Contracts	3-3-0
Advanced Topics on Semiconductor Device Physics & Characteristics	3-3-0	Applied Cryptography	3-3-0

○ Energy ICT Convergence Major

Courses	Credits-theory -practices	Courses	Credits-theory -practices
Advanced Topics in Wireless Broadband Communication	3-3-0	Intelligent Energy Systems	3-3-0
Advanced Theory of Adaptive Signal Processing	3-3-0	New and Renewable Energy Systems	3-3-0
Advanced Optical Communication	3-3-0	Energy Systems Design	3-3-0
Filter Design for Power Supply	3-3-0	Energy Business Model	3-3-0
AI Sensor Networks	3-3-0	ICT Convergence Practice I-3	3-1-5
AI Device Platform	3-3-0	ICT Convergence Practice II-3	3-1-5
Special Study on Digital Communication System	3-3-0	Energy Management System	3-3-0
Advanced Topics in Wireless Network	3-3-0	Artificial Intelligence Communication	3-3-0
Advanced Power Converter Design	3-3-0	AI Data Center	3-3-0
Single-Stage Power Conversion Circuit	3-3-0	Machine Learning	3-3-0
Advanced Topics on Multiple Antennas	3-3-0	Neural Networks	3-3-0

Courses	Credits-theory -practices	Courses	Credits-theory -practices
Wireless Energy Technology	3-3-0	Advanced Deep Learning	3-3-0
Wireless Circuit Design using CAD Tool	3-3-0	Advanced Artificial Intelligence	3-3-0
Digital RF Technology	3-3-0	IoT Platform	3-3-0
Wireless Energy Transmission Technology	3-3-0	Big Data Platform	3-3-0
Design Theory of Wireless Communication Filters	3-3-0	Artificial Intelligence Platform	3-3-0
Special Topic in Broadcasting and Telecommunications Networks	3-3-0	Introduction to Artificial Intelligence	3-3-0
Power System Control and Stability	3-3-0	Advanced Electromagnetic Engineering	3-3-0
Special Topics on Smart Grid	3-3-0	Advanced Topics in Mobile Communication Engineering	3-3-0
Power Conditioning Systems for Wind Power Systems	3-3-0	Multimodal Sensor Fusion	3-3-0
Power Conditioning Systems for Photovoltaic Systems	3-3-0	AI Communication Networks	3-3-0
Energy AI	3-3-0	Quantum AI	3-3-0
Intelligent Internet of Things	3-3-0	Quantum Computing and Information Theory	3-3-0
Analysis and Optimization of Energy Networks	3-3-0	Quantum Communication Systems	3-3-0
Energy Information and Communication Technology	3-3-0		

Mechanical Engineering

1. Introductions

Mechanical engineering is a core foundational discipline that underpins a wide range of industries, extending from automobiles, robotics, and aerospace to energy and information technology. The Department of Mechanical Engineering at Kookmin University aims to lead sustainable technological advancement and create social value by fostering strong fundamentals in engineering education, promoting future-oriented interdisciplinary research, and cultivating practical talents who contribute to society and industry. While providing rigorous education in the traditional core areas of mechanical engineering—such as thermofluids, solid mechanics, dynamics, control, and design—the department also strengthens interdisciplinary education aligned with rapidly evolving technological environments, including eco-friendly energy, future mobility, robotics and aerospace, smart manufacturing, and digital engineering.

2. Curriculum

Courses	Credits–theory –practices	Courses	Credits–theory –practices
Advanced Fluid Mechanics	3-3-0	Biomedical device	3-3-0
Advanced Thermodynamics	3-3-0	Advanced Applied Mathematics	3-3-0
Advanced Heat Power	3-3-0	Bio-Engineering	3-3-0
Advanced Gas Turbine	3-3-0	Nano-engineering	3-3-0
Special Topics in Mechanical Engineering	3-3-0	Intelligent CAD	3-3-0
Convection and Radiation Heat Transfer	3-3-0	Robotic Mechanism Design	3-3-0
Seminar in Mechanical Engineering	3-3-0	Advanced Micro-Electro-Mechanical System	3-3-0
Biomimetic Engineering	3-3-0	Dynamic System Design	3-3-0
Renewable Energy Sources	3-3-0	Robot Control	3-3-0
Simulation Software	3-3-0	Rotordynamics	3-3-0
Advanced HVAC System	3-3-0	Machinery Vibration Diagnostics	3-3-0
Advanced Micro Thermofluids	3-3-0	AI Sensor Engineering	3-3-0
Multi-phase Flow	3-3-0	Thesis Study1	3-3-0

Courses	Credits–theory –practices	Courses	Credits–theory –practices
Thesis Study2	3-3-0	Manufacturing Processes for Composite Materials	3-3-0
Fundamental and Applications of Laser	3-3-0	Advanced Robot Control	3-3-0
Nontraditional Manufacturing	3-3-0	Dynamic Control Systems	3-3-0
Fuel Cell Fundamentals	3-3-0	Advanced Guidance and Control of Aerospace systems	3-3-0
Advanced Nanomaterials and Nanostructures	3-3-0	Case Studies in Mechanical Engineering	3-3-0
Contact Mechanics	3-3-0	Advanced Heat Transfer	3-3-0
Surface Engineering	3-3-0	Advanced Energy Engineering	3-3-0
AI based Aerospace Guidance and Control	3-3-0		
Intelligent Mechatronics	3-3-0		

■ Civil and Environmental Engineering

1. Introductions

Department of Civil and Environmental Engineering focuses on developing solutions for infrastructure challenges, including the construction of highways, railroads, bridges, tunnels, harbors, and airports, as well as multi-purpose dams, water management systems, energy, and environmental plants. Recently, our department's curriculum has transitioned toward smart construction through an interdisciplinary lens. With a faculty of reputable scholars and well-equipped laboratories, we are fully prepared to lead education and research in the advancements of smart construction.

2. Curriculum

○ Structural Engineering Major

Courses	Credits—theory —practices	Courses	Credits—theory —practices
Advanced Structural Mechanics	3-3-0	Advanced Composite Structures	3-3-0
Advanced Construction Materials	3-3-0	Advanced Prestressed Concrete Design	3-3-0
Advanced Design of Concrete Structures	3-3-0	Stability of Structures	3-3-0
Advanced Steel Structure Design	3-3-0	Theory of Plates and Shells	3-3-0
Experimental Stress Analysis	3-3-0	Special Topics in Structural Mechanics	3-3-0
Advanced Bridge Engineering	3-3-0	Special Topics in Structural Engineering	3-3-0
Theory of Elasticity	3-3-0	Cold-Formed Steel Structure Design	3-3-0
Dynamics of Structures	3-3-0	Non-Destructive Analysis	3-3-0
Finite Element Analysis	3-3-0	Seismic Design	3-3-0
Fracture Mechanics	3-3-0		

○ Geotechnical Engineering Major

Courses	Credits—theory —practices	Courses	Credits—theory —practices
Advanced Geotechnical Engineering	3-3-0	Excavation Engineering	3-3-0
Advanced Soil Mechanics	3-3-0	Special Topics in Foundation Engineering	3-3-0
Advanced Foundation Engineering	3-3-0	Project Management for Underground Space Development	3-3-0

Subsoil Exploration	3-3-0	Advanced Smart Construction Management	3-3-0
Numerical Methods in Geotechnical Engineering	3-3-0	Advanced Construction Project Management	3-3-0
Soil Improvement	3-3-0	Research Methodology in Construction and Environmental Engineering	3-3-0
Soil Dynamics	3-3-0	Research Trends in Construction Project Management	3-3-0
Rock Mechanics	3-3-0		

○ Hydraulic Engineering Major

Courses	Credits—theory—practices	Courses	Credits—theory—practices
Flow in Open Channel	3-3-0	Hydraulic Modeling	3-3-0
Computational Hydraulics	3-3-0	Mixing in Water	3-3-0
Advanced Hydrology	3-3-0	Special Topics in AI-base Smart Hydrologic Engineering	3-3-0
Hydrodynamics	3-3-0	Special Topics in Hydraulic Engineering	3-3-0
Bigdata Analysis for Natual Disaster Modeling	3-3-0	Big Data and Water Resources for AI	3-3-0
Water Resources System	3-3-0	AI-Utilized Watershed Analaysis Techniques	3-3-0
Stochastic Hydrology	3-3-0	Climate Change and Response Policies	3-3-0
Porous Media Hydrodynamics	3-3-0	Modeling and Adaptation Technologies for Compound Disasters Due to Climate Change	3-3-0
Hydraulic Analysis of Unsteady Flow	3-3-0		

○ Environmental Engineering Major

Courses	Credits—theory—practices	Courses	Credits—theory—practices
Advanced Water Supply Engineering	3-3-0	Water Purification Facility Design	3-3-0
Advanced Wastewater Treatment Engineering	3-3-0	Wastewater Treatment Facility Design	3-3-0
Advanced Water Pollution	3-3-0	Conservation of Aquatic Environment	3-3-0
Water Supply Network Design	3-3-0	Industrial Wastewater Treatment Plant Design	3-3-0
Sewage System Design	3-3-0	Solid Waste Treatment Plant Design	3-3-0

Industrial Wastewater Treatment	3-3-0	Special Topics in Water Pollution	3-3-0
Environmental Impact Assessment	3-3-0	Analysis and Application of Environment System Data	3-3-0
Special Topics in Pollution and Smart Technologies	3-3-0	Analysis of Smart Water Supply Facilities	3-3-0
Special Topics in Environment	3-3-0	Climate Change and Alternative Water Resources	3-3-0

○ Engineering of Seismic Disaster Prevention Major

Courses	Credits-theory -practices	Courses	Credits-theory -practices
Data Engineering for Seismic Design	3-3-0	Seismic Reliability	3-3-0
Seismic Design of Foundation	3-3-0	Seismic design of industrial facilities	3-3-0
Advanced Geotechnical Earthquake Engineering	3-3-0		

III. Admission

1. Selection Procedure

○ Application and screening period (estimated date) : 2026.02.27. ~ 2026.03.31.

※ Once the application guidelines are released on studyinkorea.go.kr by NIIED, the accurate date of an application and screening period will be posted on the university website (url:<https://iat.kookmin.ac.kr/admission>).

2. Required Document

○ List of documents

Type	No.	Application Documents	Master's	Doctoral	Research
Documents to complete (Required)	1	(form 1) Application Form	Required	Required	Required
	2	(form 2) Personal Statement	Required	Required	Required
	3	(form 3) Study Plan	Required	Required	
	4	(form 4) Research Proposal (only applicable for research program applicants)			Required
	5	(form 5) ONE Letter of Recommendation	Required	Required	Required
	6	(form 6) Letter of Invitation (issued by the research program university)			Required
	7	(form 7) GKS Applicant Agreement	Required	Required	Required
	8	(form 8) Personal Medical Assessment	Required	Required	Required
	9	(form 9) Consent to Collect and Use Personal Information	Required	Required	Required
Certificates (Required)	10	Applicant's/Parent(s)' Proof of Citizenship and family relationship Document	Required	Required	Required
	11	Bachelor's Graduation Certificate (or Diploma)	Required	Required	Required

Must be Apostilled or Consular confirmed *Required for relevant applicants	11'	Bachelor's Degree Transcript	Required	Required	Required
	12	Master's Graduation Certificate (or Diploma)		Required	Required
	12'	Master's Degree Transcript		Required	Required
	13	Doctoral Graduation Certificate (or Diploma) – only applicable for postdoctoral research program applicants			Required
	13'	Doctoral Degree Transcript – only applicable for postdoctoral research program applicants			Required
	14	Certificate of Employment – only applicable for E.S.C.I. professionals under research program			Required
	15*	Proof of Overseas Korean Document/Proof of Korean Adoptee Document	Optional	Optional	Optional
	16*	Proof of Korean Citizenship Renunciation Document – applicant and his/her parent(s)	Optional	Optional	Optional
	17*	Proof of Korean War Veteran's Descendant	Optional	Optional	Optional
	18*	Required Certificates for Current Teaching Professionals 1) Certificate of Employment (teaching subject clearly indicated) 2) Certificate of Teaching Experience (years taught specified)	Optional	Optional	
	19*	Required Certificates for Prospective Teaching Professionals 1) Certificate that confirms completion of a teaching professional training course (classes taken should be specified) or Teaching License	Optional	Optional	
Other documents (Optional)	20	Score report of valid TOPIK (original) or English Proficiency Test (copy)	Optional	Optional	Optional
	21	Awards and other certificates, etc. (copy)	Optional	Optional	Optional
	22	Applicant's Passport (copy)	Optional	Optional	Optional

○ Submission Method : By Post or In-person

3. Inquiry and application address

○ Contact Information of the university

- (Tel) 82-2-910-5835 (Fax) 82-2-910-5830
- E-mail : enterkmu@kookmin.ac.kr
- Webpage : iat.kookmin.ac.kr

○ Where to send application document: International Affairs Division

(Global Center #202), Kookmin University, #77, Jeongneung-ro, Seongbuk-gu, Seoul, 02707, Republic of Korea

4. Notification

- Students who have graduated high school, undergraduate, or graduate school in Korea cannot apply (Exception: Oversea adoption, GKS Alumnus)
- Multiple application within the same tracks are impossible