B.Sc. Biomedical Engineering | Undergraduate Program Map

German Jordanian University · School of Applied Medical Sciences · Department of Biomedical Engineering

Academic Year 2026–2027 · 173 credit hours · Track 1: Biomedical Instrumentation · Track 2: Bionic and Biomechanical · 5 years incl. German Year

PLACEMENT
Remedial courses
not in the 170

- **Elementary English (remedial)** — ENGL0098 | 3 Cr.
- **Intermediate English (remedial)** — ENGL0099 | 3 Cr.
- **Pre-Mathematics (remedial)** — MATH0099 | 3 Cr.
- **Elementary Arabic (remedial)** — ARB0099 | 3 Cr.

YEAR 1 — Semester 1 — 19 Cr.

- **German I (B1 Track)** — GERL101B1 | 3 Cr.
- **Upper-Intermediate English** — ENGL1001 | 3 Cr.
- **Calculus I** — MATH101 | 3 Cr.
- **Physics I** — PHYS103 | 3 Cr.
- **General Chemistry** — CHEM103 | 3 Cr.
- **General Chemistry Lab** — CHEM106 | 1 Cr.
- **Computing Fundamentals** — CS116 | 3 Cr.

YEAR 1 — Semester 2 — 19 Cr.

- **German II (B1/B2 Track)** — GERL102B1/B2 | 3 Cr.
- **Advanced English** — ENGL1002 | 3 Cr.
- **Calculus II** — MATH102 | 3 Cr.
- **Physics II** — PHYS104 | 3 Cr.
- **Physics Lab** — PHYS106 | 1 Cr.
- **Engineering Workshop** — IE0141 | 1 Cr.
- **Human Biology** — BIO112 | 2 Cr.
- **Computer Aided Engineering Drawing** — ME0111 | 2 Cr.
- **Computing Fundamentals Lab** — CS1160 | 1 Cr.

YEAR 2 — Semester 1 — 19 Cr.

- **German III (B1/B2 Track)** — GERL201B1/B2 | 3 Cr.
- **Arabic** — ARB100 | 3 Cr.
- **Applied Mathematics for Engineers** — MATH203 | 3 Cr.
- **Electrical Circuits and Machines** — ME0212 | 3 Cr.
- **Electrical Circuits Lab** — ENE213 | 1 Cr.
- **Differential Equations** — MATH205 | 3 Cr.
- **Anatomy and Physiology** — BM211 | 3 Cr.

YEAR 2 — Semester 2 — 18 Cr.

- **German IV (B1/B2 Track)** — GERL202B1/B2 | 3 Cr.
- **Medical Ethics and Communication Skills** — BM2002 | 2 Cr.
- **Biomechanics and Rehabilitation I** — BM341 | 3 Cr.
- **Medical Electronics I** — BM252 | 3 Cr.
- **Probability and Statistics** — IE0121 | 3 Cr.
- **Anatomy and Physiology Lab** — BM213 | 1 Cr.
- **Digital Systems** — CE212 | 3 Cr.

YEAR 3 — Semester 1 — 15 Cr.

- **German V (B1/B2 Track)** — GERL301B1/B2 | 3 Cr.
- **Biomechanics and Rehabilitation Lab** — BM344 | 1 Cr.
- **Medical Signal Processing** — BM321 | 3 Cr.
- **Numerical Methods for Engineers** — BM371 | 3 Cr.
- **Numerical Methods for Engineers Lab** — BM3712 | 1 Cr.
- **Biomaterials** — BM331 | 3 Cr.
- **Digital Systems Lab** — CE2120 | 1 Cr.

YEAR 3 — Semester 2 — 15 Cr.

- **German VI (B1/B2 Track)** — GERL302B1/B2 | 3 Cr.
- **Field Training (160 h, Jordan)** — BM391 | 0 Cr. | 160 h
- **Medical Signal Processing Lab** — BM323 | 1 Cr.
- **Biomedical Sensors and Transducers** — BM352 | 3 Cr.
- **Biomedical Sensors and Transducers Lab** — BM358 | 1 Cr.
- **Physiological Modelling and Control Systems** — BM3255 | 3 Cr.
- **Physiological Modelling and Control Systems Lab** — BM3288 | 1 Cr.
- **Medical Electronics II** — BM357 | 3 Cr.

YEAR 4 — German Year — Semester 1 — 18 Cr.

Four program electives at a German partner university (12 Cr.). BM5204 and the track course are listed in the same semester.

- **Biomechanics and Rehabilitation II** — BM342 | 3 Cr. | Track 2
- **Medical Signal Processing II** — BM5204 | 3 Cr.
- **Biofluid Mechanics and Transport Phenomena** — BM242 | 3 Cr. | Track 1
- **Program Elective I** — Elective | 3 Cr.
- **Program Elective II** — Elective | 3 Cr.
- **Program Elective III** — Elective | 3 Cr.
- **Program Elective IV** — Elective | 3 Cr.

YEAR 4 — German Year — Semester 2 — 12 Cr.

BM499 gate in the plan: pass BM341, BM551, BM321 + dept. approval. BM551 is scheduled in Year 5 (see report).

- **International Internship (Germany, ≥ 20 weeks)** — BM499 | 12 Cr.

YEAR 5 — Semester 1 — 20 Cr.

- **National Education (Arabic/English)** — NE101/NEE101 | 3 Cr.
- **Graduation Project I** — BM598 | 1 Cr.
- **University Elective** — UE | 3 Cr.
- **Medical Image Processing** — BM5203 | 3 Cr.
- **Medical Telemetry** — BM5201 | 3 Cr.
- **Healthcare Management and Engineering Economy** — BM5811 | 3 Cr.
- **Medical Instrumentation I** — BM551 | 3 Cr.
- **Medical Instrumentation Lab** — BM557 | 1 Cr.

YEAR 5 — Semester 2 — 18 Cr.

- **Military Science** — MILS100/101 | 3 Cr.
- **Graduation Project II** — BM599 | 2 Cr.
- **University Elective** — UE | 3 Cr.
- **Medical Image Processing Lab** — BM326 | 1 Cr. | Track 1
- **Biomaterials Lab** — BM333 | 1 Cr. | Track 2
- **Selected Topics in Biomedical Engineering** — BM5906 | 3 Cr.
- **Digital Bioelectronics** — BM5602 | 3 Cr. | Track 1
- **Medical Instrumentation II** — BM552 | 3 Cr. | Track 1
- **Rehabilitation and Assistive Instrumentation** — BM5513 | 3 Cr. | Track 2
- **Artificial Organs and Limbs** — BM563 | 3 Cr. | Track 2

LEGEND

- Electronics, Signals and Instrumentation
- Biomechanics, Biomaterials, Physiological Systems
- Foundational Sciences (Physics, Chemistry, Biology)
- Mathematics, Statistics, Computing, Workshop
- Languages (Arabic, English, German)
- University requirements, ethics, management, electives
- Graduation project
- Field training and international internship
- Track 1: Biomedical Instrumentation Engineering (blue outline)
- Track 2: Bionic and Biomechanical Engineering (magenta outline)
- Dashed border = elective slot
- Dotted border = remedial (placement)
- Prerequisite (solid arrow)
- Corequisite (dashed arrow)

CREDIT STRUCTURE

University requirements	**21 + 6 elective = 27**
School requirements	**27**
Program compulsory, all tracks (incl. BM499 12 Cr.)	**94**
Track-specific courses (13 per track)	**13**
Program electives (German Year)	**12**
TOTAL	**173 Cr.**

GERMAN YEAR AND TRACKS

- Semester 1: four 3-credit program electives (12 Cr.) at a German partner university; pool of 80 listed courses. BM5204 and the track course BM242 (Track 1) / BM342 (Track 2) are listed in the same semester.
- Semester 2: BM499 International Internship, at least 20 weeks, 12 Cr., department approval.
- Each student follows one track. Both tracks total 13 Cr.; both boxes of a pair are shown, semester totals count Track 1.

Unofficial visualization of the BME Study Plan 2026–2027. Not formally approved; see the verification report.

Course boxes show: course name, code | credit hours. Arrows point from the required course to the dependent course. Source: GJU BME Study Plan 2026–2027 (study-plan guide; detailed tables used where they differ).