

Global Digital Health (GDH)

Course Syllabus



Course Metadata

Course Title	Global Digital Health (GDH)
Institution	Deggendorf Institute of Technology (DIT), European Campus Rottal – Inn (ECRI), offered through the Virtuelle Hochschule Bayern (VHB)
Consortium Partners	Hochschule Neu – Ulm, Technische Universität München, Universität Augsburg
Programs	Health Science programmes; elective or compulsory depending on the program; applicable to Healthcare Management, Public Health, Physician Assistant, and any health related study programs
Instructor(s)	Prof. Dr. Georgi Chaltikyan; Fara Aninha Fernandes; Yasaman Rasouli; Prof. Dr. Horst Kunhardt
ECTS / SWS	5 ECTS / 4 SWS
Level	Bachelor and Master
Delivery Mode	Fully online, self – paced with optional live sessions
Language	English
Frequency	Once each semester (Winter and Summer)
Assessment	Portfolio – based (unit quizzes, min. 70% per unit to advance to next unit) and a final Countryanalysis report (term paper)
Prerequisites	None

Course Description

Global Digital Health (GDH) is an innovative online course providing the fundamental knowledge, skills, and competences necessary for all Digital Health specialists. It is designed for motivated graduates of biomedical and computer science disciplines from around the world who are interested in the digital transformation of health systems. The course offers a wide and international perspective on Digital Health.

The course is organised into two parts. Part 1 (Units 1 to 15) covers the theoretical and technical foundations of global health and Digital Health, spanning topics from global health principles and the burden of disease to healthcare data standards, interoperability, telemedicine, mobile health, extended reality, artificial intelligence, legislation, and data security. Part 2 (Units 16 to 20) applies this knowledge through the Countryanalysis module, in which students examine the health system, ICT infrastructure, and Digital Health ecosystem of selected countries: Germany, the United States, Israel, Canada, and Nigeria. Through the Countryanalysis approach, students develop analytical and critical – appraisal skills applicable to any national healthcare context. The course is worth 5 ECTS credits (150 hours of the total workload) and is offered each semester. Teaching combines pre – recorded lectures, reading materials, and offline and live class discussions.

Course Structure and Unit Descriptions

The course consists of 20 units delivered as recorded videos and H5P reading material. Each unit is designed for approximately 135 minutes of core engagement: 40 – 50 minutes of pre – recorded video lecture and 60 – 70 minutes

of reading, and 15 – 20 minutes of quiz self – assessment, plus additional time for self – study and discussion.

UNIT 1 Overview of Digital Health – General Provisions and Concepts

This unit introduces the scope and historical evolution of the Digital Health field. Students explore the definitions of eHealth, Digital Health, and related terms; the WHO Classification of Digital Health Interventions (2023); the benefits, challenges, and limitations of digitisation; and current global trends including mobile health, telehealth, artificial intelligence, IoT, 10P Health, and major national and international initiatives. The unit also examines the role of Big Tech in healthcare and lessons learned from large – scale implementation failures.

LEARNING OBJECTIVES

- Outline the scope of the Digital Health field
- Provide a historical evolution of the Digital Health field
- Classify the different ways to use digital and mobile technologies to meet the needs of a health system
- Enumerate the necessity, benefits and limitations of Digital Health
- Discuss global trends and national initiatives in the Digital Health field

KEY TOPICS

Scope and definitions of Digital Health; WHO classification of digital health interventions; benefits and opportunities; challenges and limitations; global Digital Health trends; national initiatives (WHO, EU, USA, Germany); Digital Health champions (Israel, Finland); Big Tech in healthcare; 10P Health / Digital Precision Health; investment and market overview; lessons from initiative failures.

UNIT 2 Global Health Principles, Health Determinants, Measurements and Trends

This unit covers the definitions, activities, and operations of public health and global health, including the WHO core functions, the Sustainable Development Goals, and key global health issues such as COVID – 19, armed conflict, antimicrobial resistance, and noncommunicable diseases. Students examine the determinants of health, demographic and epidemiological transitions, and essential health status indicators including life expectancy and mortality rates by World Bank region. The unit concludes with the role of data analytics in global health surveillance.

LEARNING OBJECTIVES

- Understand the most central messages to take away from studying global health
- Discuss the definitions, activities, approaches, operations, and examples of public health
- Describe concepts and key terms in global health and important global health issues
- Enumerate the Sustainable Development Goals and their relation to global health
- Describe the determinants of health
- Articulate key public health concepts, including the demographic and epidemiological transitions
- Describe important health indicators and key terms related to measuring health status

KEY TOPICS

Definitions of health, public health, global health; public health services and approaches; WHO core functions; global health topics and issues; Sustainable Development Goals; determinants of health; demography: population growth, ageing, urbanisation; demographic and epidemiological transitions; key health status indicators (life expectancy, mortality rates); World Bank income groups; data analytics in global health.

UNIT 3 Burden of Disease: Communicable, Noncommunicable and Unintentional Injuries

This unit examines the global burden of disease using standard measures including disability – adjusted life years (DALYs) and health – adjusted life expectancy (HALE). Students analyse leading causes of death and DALYs globally and by region, income group, age, and sex. The unit covers communicable diseases, noncommunicable diseases (cardiovascular disease, cancer, diabetes, mental disorders), and unintentional injuries, with attention to risk factors, costs, and evidence – based approaches to reducing disease burden.

LEARNING OBJECTIVES

- Describe the burden of disease, the impact of key health conditions on individuals and on communities, and critical issues in the organization and delivery of health services
- Explain health – adjusted life expectancy (HALE) and disability – adjusted life years (DALYs)
- Describe the leading causes of death and the burden of disease in low –, middle –, and high – income countries, and their key risk factors
- Discuss with confidence the burden of disease in various regions of the world, how it varies both within and across countries, and how the disease burden can be addressed in cost – effective ways

KEY TOPICS

HALE and DALYs: concepts and calculation; global causes of death and DALYs (2023); disease burden by region, income group, age, and sex; communicable diseases: concepts, leading causes, AMR; HIV/AIDS, tuberculosis, malaria, diarrhoeal disease, NTDs; noncommunicable diseases: cardiovascular disease, cancer, diabetes, mental disorders; unintentional injuries: risk factors and prevention.

UNIT 4 Economics of Healthcare and Health Technology Assessment

This unit applies economic concepts to healthcare, examining the structure and functions of health systems, levels of care, health expenditure, market failures, health insurance, and the PPPS funding framework. Students compare the Beveridge, Bismarck, national health insurance, and private insurance models, and examine value – based health care. The unit concludes with health technology assessment (HTA), including cost – effectiveness analysis, cost – benefit analysis, cost – utility analysis, and cost – minimisation analysis.

LEARNING OBJECTIVES

- Define basic economic concepts in healthcare contexts
- Explain supply and demand interactions in healthcare markets
- Identify key healthcare market failures
- Describe the archetypal categories of health systems
- Describe the main trilemma of health economics

KEY TOPICS

Health system workforce and levels of care; health expenditure and global comparison; healthcare as an economic good; market failure in healthcare; health insurance and funding models; value – based health care; resource allocation and priority – setting; economic evaluation methods; health technology assessment (HTA); QALYs and incremental cost – effectiveness.

UNIT 5 Contemporary Health Research

This unit introduces evidence – based medicine (EBM), its history, principles, and the five – step EBM process. Students learn to formulate clinical questions using the PICO framework and to identify, critically appraise, and apply best available evidence. Study designs covered include case series, cross – sectional, case – control, cohort, and experimental studies, systematic reviews, and meta – analyses. The unit also addresses the GRADE evidence hierarchy, statistical concepts, clinical practice guidelines, and AI tools for evidence synthesis.

LEARNING OBJECTIVES

- Define Evidence – Based Medicine (EBM) and explain its core principles
- Trace the historical development of EBM and articulate its significance in modern clinical practice
- Formulate a structured health research query using the EBM process (Step 1)
- Identify and retrieve evidence from key online information resources (Step 2)
- Understand critical appraisal frameworks to evaluate the quality and validity of evidence (Step 3)
- Describe EBM process to integrate evidence into clinical decision – making and evaluate outcomes (Steps 4 – 5)
- Recognize the key criticisms and limitations of EBM in real – world application
- Explain the role of Clinical Practice Guidelines as a product of the EBM process

KEY TOPICS

Evidence – based medicine: definition, history, pioneers; EBM process and PICO framework; types of clinical questions and study designs; levels of evidence and GRADE; medical literature databases (PubMed, Cochrane, UpToDate); AI tools for evidence search; real – world evidence; critical appraisal: validity, results, applicability; clinical practice guidelines: development and barriers; statistical significance and confidence intervals.

UNIT 6 Technological Basics of Digital Health

This unit examines the hardware, software, and connectivity components required for Digital Health systems. Students learn about the DIKW hierarchy, types of clinical data, telecommunications fundamentals, wired and wireless communication technologies (ADSL, fibre, Bluetooth, Wi – Fi, 5G, LPWAN), network architectures and the OSI model, internet infrastructure, cloud computing, edge and fog computing, AI infrastructure, and videoconferencing systems and standards. The unit concludes with medical diagnostic devices and telemedicine site setup.

LEARNING OBJECTIVES

- Define the main components of technological solutions used in Digital Health Systems
- Describe the basic underlying principles of data transmission
- Understand the basic signal transmission methodology and formats
- Describe the main wired and wireless telecommunication channels
- Understand the basics of computer networking
- Understand the basic principles of the Internet
- Describe the current Internet penetration and affordability
- Describe the basic infrastructure of Artificial Intelligence

KEY TOPICS

Requirements for Digital Health technology; DIKW hierarchy and clinical data types; analogue vs. digital signals; wired telecommunications (ADSL, DSL, fibre – optic); wireless telecommunications (Bluetooth, Wi – Fi, 5G, LPWAN); network hardware, topologies, and OSI model; network scale types (BAN, PAN, LAN, WAN); internet, cloud computing, VPN, edge and fog computing; AI infrastructure; videoconferencing: standards, components, types; medical diagnostic devices; telemedicine site setup.

UNIT 7 Coding of Digital Health Data – Standards, Terminology, Classifications

This unit explains the need for semantic interoperability and standardised coding in Digital Health. Students study Cimino's 12 Desiderata and examine the major coding systems: ICD – 10 and ICD – 11 (disease classification), SNOMED CT (clinical terminology), DRG and G – DRG (hospital payment classification), OPS (German procedure coding), LOINC (laboratory and clinical observations), MEDCIN, RxNorm, ICF (functioning and disability), ICHI (health interventions), and UMLS (unified vocabulary integration).

LEARNING OBJECTIVES

- Discuss the need for standards and interoperability
- Describe standardizing terminologies – problems, requirements and the desiderata
- Understand purpose, uses, structure and composition of ICD – 10 & ICD – 11
- Understand purpose, uses, structure and composition of SNOMED CT
- Understand purpose, uses, structure and composition of DRG and OPS Systems
- Understand purpose, uses, structure and composition of LOINC
- Understand purpose, uses, structure and composition of ICF and ICHI
- Understand purpose and uses of UMLS

KEY TOPICS

Need for health data standards; syntax, semantics, vocabulary, taxonomy; Cimino's Desiderata; ICD – 10 and ICD – 11: structure, features, comparison; SNOMED CT: overview, structure, expressions; DRG: overview, MS – DRG, G – DRG; OPS: German procedure coding; LOINC: overview, structure, RELMA; MEDCIN and RxNorm; ICF and ICHI; UMLS knowledge sources; MeSH.

UNIT 8 Electronic Health Records

This unit traces the history and rationale of electronic health records (EHRs), contrasting paper – based limitations with the clinical and operational benefits of digital records. Students examine EHR types, core functionalities (including CPOE, CDSS, and electronic prescribing), AI applications in EHRs (including AI medical scribes), and EHR adoption statistics in the United States, Europe, and Germany. The unit also covers the HIMSS EMRAM maturity model, procurement steps, and the major global EHR vendors.

LEARNING OBJECTIVES

- Describe the limitations of paper – based health records
- Identify the rationale and benefits of electronic health records
- Describe the types, functionalities of EHR, CPOE, CDSS, and Electronic Prescribing
- Discuss EHR adoption in various countries
- Discuss challenges, limitations and barriers to adoption of EHR
- Discuss future evolution and applications of AI in EHR

KEY TOPICS

Medical documentation principles; EHR history and definitions (EMR, EHR, PHR); paper record limitations and EHR benefits; EHR conceptual structure and core functionalities; CPOE, CDSS, and electronic prescribing; AI applications in EHRs and AI medical scribes; EHR adoption: USA, Europe, Germany, DACH; HIMSS EMRAM; challenges and barriers to adoption; EHR procurement steps; major EHR vendors (Epic, Oracle Cerner, Dedalus).

UNIT 9 Health Data Interoperability and Health Information Exchange

This unit addresses the principles and practice of health information exchange (HIE) and interoperability. Students explore the four levels of interoperability, the FAIR data principles, and major interoperability standards including XML, JSON, HL7 (v2, v3, CDA), HL7 FHIR, openEHR, and OMOP. The Integrating the Healthcare Enterprise (IHE) initiative is examined, alongside HIE architecture types, consent models, and global case studies. Substantial coverage is given to the European Health Data Space (EHDS) Regulation (2025).

LEARNING OBJECTIVES

- Identify the need for and benefits of health information exchange and interoperability of health records
- Discuss important definitions related to HIE
- List the level of Interoperability levels, maturity
- List healthcare data that should be ideally shared
- Understand current interoperability standards
- Know the basics of HL7 as the worldwide accepted standard
- Describe the different standards of the HL7 family
- Categorize and classify different HIE approaches
- Know the situation with HIE in different countries

KEY TOPICS

Why interoperability matters; HIE definitions and consent models; four levels of interoperability; FAIR principles; XML and JSON in health IT; HL7 standards family (v2, v3, CDA); HL7 FHIR (R4/R5); openEHR and OMOP; IHE and integration profiles; HIE classification and architecture types; EU cross – border: MyHealth@EU; US HIE: TEFCA and eHealth Exchange; EHDS Regulation (2025): legal framework, patient rights, secondary use; AI and interoperability challenges.

UNIT 10 Telemedicine and Telehealth in Various Clinical Specialties

This unit covers the full scope of telemedicine and telehealth, including definitions, history, types (store – and – forward, real – time, remote patient monitoring), and organisational frameworks (NCQA, WHO Consolidated Telemedicine Implementation Guide). Specialty applications examined include teleradiology, telepathology, teledermatology, telecardiology, teleneurology, teleophthalmology, tele – mental health, and tele – robotic surgery. The unit addresses evidence on clinical outcomes and cost – effectiveness, benefits and barriers, ethical and legal frameworks, and market trends.

LEARNING OBJECTIVES

- Describe the key concepts and terminology related to Telemedicine and Telehealth
- Outline the main historical milestones in the development of Telemedicine
- Explain the organizational aspects of Telemedicine programs
- Discuss the differences in Real – Time and Store – and – Forward Telemedicine
- Describe application scenarios of Telemedicine in various clinical specialties (radiology, pathology, dermatology, cardiology, neurology, ophthalmology, ENT, emergency medicine, psychiatry, and surgery)
- Describe the benefits of Telemedicine, and barriers to implementation of Telemedicine
- Outline the key ethical, legal, and regulatory aspects of Telemedicine

KEY TOPICS

eHealth and telemedicine definitions; history of telemedicine; types: store – and – forward, real – time, RPM; technology infrastructure for telemedicine; NCQA Telehealth Framework and WHO Implementation Guide; MAST evaluation model; specialty applications: teleradiology, telepathology, teledermatology, telecardiology, teleneurology, teleophthalmology, tele – mental health, tele – robotic surgery; evidence: clinical outcomes and cost – effectiveness; benefits and barriers; ethical and legal aspects; AI and 5G in telemedicine.

UNIT 11 Mobile Health and Remote Monitoring in Health and Disease

This unit covers mobile health (mHealth), wireless monitoring systems, digital therapeutics, and consumer Digital Health. Topics include the definition and evolution of mHealth, mHealth application statistics, the WHO Classification of Digital Health Interventions, the three – tier Body Area Network model for remote patient monitoring, sensor devices and digital biomarkers, electronic visits, consumer Digital Health portals, patient web portals, and personal health records. Germany's DiGA fast – track pathway for digital health applications is discussed in detail.

LEARNING OBJECTIVES

- Outline the importance and range of mHealth
- Describe the evolution from personal digital assistants to smartphones and the emergence of mHealth
- Compare and contrast mobile technology for clinicians and patients
- Identify the benefits, challenges, and limitations of mobile technology
- Describe RPM: Sensor Technology & Architecture
- Describe Electronic Visit
- List various Consumer Digital Health Applications
- Describe Personal Health Records with examples

KEY TOPICS

mHealth definition and evolution; global mobile statistics; cellular networks (2G to 5G/6G); mHealth application statistics and features; mobile technology for patients and healthcare professionals; digital therapeutics (DTx) and DiGA pathway; remote monitoring: IoT, WSN, BAN architecture; sensor devices and digital biomarkers; electronic visits and eVisit platforms; consumer Digital Health and patient portals; personal health records (PHRs): models and features.

UNIT 12 **Enhanced Medical Visualization and Intervention: AR / VR / MR, Robotics**

This unit examines extended reality (XR) technologies and their applications in healthcare. Case studies of validated XR products are presented across medical training (Osso VR, HoloAnatomy, SimXVR), surgery (xVision Spine System, Medivis SurgicalAR), rehabilitation (XRHealth), and therapeutic care (RelieVRx, Smileyscope). The unit also covers medical robotics, AI – integrated surgical robotics, remote robotic surgery, digital twins in surgery, surgical navigation, and the regulatory and cybersecurity implications of connected intervention technologies.

LEARNING OBJECTIVES

- Define the key concepts and definitions in XR
- Trace milestones and history of XR
- Explain market trends of XR
- Explore XR use cases in healthcare
- Explain robotics in healthcare
- Describe implications & challenges in medical XR and robotics

KEY TOPICS

Extended reality (XR): VR, AR, MR definitions; history of XR; XR use cases in healthcare; medical training: Osso VR, HoloAnatomy, SimXVR; surgery: xVision, Levita MARS, Medivis SurgicalAR; rehabilitation: XRHealth; therapeutic care: RelieVRx, Smileyscope; medical robotics: history, market, clinical domains; da Vinci system and robotic innovations; AI – integrated and soft robotics; haptic feedback; remote robotic surgery and digital twins; image – guided surgical navigation; XR and AR as medical devices; cybersecurity in connected intervention.

UNIT 13 Artificial Intelligence for Health (AI4H) and Digital Precision Health (10P – Health)

This unit provides a high – level overview of Artificial Intelligence for Health (AI4H), including machine learning, deep learning, natural language processing, computer vision, and generative AI and large language models. Students examine major healthcare AI use cases, LLM healthcare applications, current evidence on AI adoption, clinical decision support innovations, and the challenges of hallucination, bias, data privacy, and regulation. The unit also introduces Digital Precision Health (10P – Health), omics technologies, digital twins, and global initiatives including the NIH All of Us programme and the European Health Data Space.

LEARNING OBJECTIVES

- Describe the definitions, classification, and history of artificial intelligence, including Machine Learning, Deep Learning, NLP, and Computer Vision
- Describe various healthcare uses of Artificial Intelligence
- Outline the key healthcare applications of Generative AI and Foundation Models
- Discuss the principal challenges associated with AI for Health, including hallucination, bias, data privacy, and regulatory compliance
- Describe the Digital Precision Health (10P – Health) framework and the role of omics technologies and Digital Twins
- Identify major global and national initiatives promoting AI4H and 10P – Health

KEY TOPICS

AI definitions and classification; history of AI; machine learning and deep learning; NLP and computer vision; generative AI and LLMs: key concepts; FDA – cleared AI/ML medical devices; AI use cases in healthcare; LLM healthcare applications and clinical decision support; challenges: hallucination, bias, privacy, regulation; regulatory sandboxes; Digital Precision Health (10P – Health); omics technologies; digital twins in healthcare; global initiatives: NIH All of Us, EU EHDS.

UNIT 14 Legislation and Regulation of Digital Health

This unit examines regulatory frameworks governing Digital Health in the European Union, Germany, and the United States. Topics include the medical device lifecycle, EU MDR (2017/745), IVDR, the EUDAMED database, Software as a Medical Device (SaMD) classification under MDR Rule 11, GDPR, the EHDS, NIS2, liability frameworks, Germany's DiGA and DiPA pathways, FDA device classification, HIPAA, the 21st Century Cures Act, and the EU AI Act with its risk classification, prohibited AI systems, and high – risk AI obligations.

LEARNING OBJECTIVES

- Discuss the need for regulation of digital health
- Describe the regulatory landscape of digital health
- Discuss the digital health regulation in Germany
- Discuss the regulation of artificial intelligence – based medical devices
- Discuss the approaches to health applications policy in selected countries

KEY TOPICS

Why regulate Digital Health; medical device lifecycle; EU MDR 2017/745: classification, EUDAMED; IVDR 2017/746; SaMD: MDR Rule 11 and IMDRF categories; key ISO standards; GDPR and e – Privacy; EHDS Regulation (2025); NIS2 and Cybersecurity Act; Germany: DiGA, DiPA, DigiG; USA: FDA classification, 21st Century Cures Act, HIPAA; EU AI Act: risk classification, prohibited and high – risk AI; ethics frameworks: WHO, bioethics pillars.

UNIT 15 Data Protection in Digital Health

This unit covers IT security architecture, threat landscape, and defensive measures relevant to healthcare organisations. Topics include the multi – layer defence – in – depth model, virus scanners, firewalls, intrusion detection and prevention systems, honeypots, digital certificates, VPNs, and the BSI IT Baseline Protection framework. Students examine cybersecurity threats including malware, ransomware, phishing, DDoS attacks, and advanced persistent threats, as well as the MITRE ATT&CK framework, access control models, authentication, identity management, and cryptographic principles.

LEARNING OBJECTIVES

- Explain the function and limitations of key security technologies, including virus scanners, firewalls, and intrusion detection systems
- Identify and classify common cyber threats, attack vectors, and fraud types relevant to healthcare
- Describe symmetric and asymmetric cryptographic methods and their application in securing health data
- Differentiate between access control models (DAC, RBAC, MAC) and authentication mechanisms
- Outline the German Federal Office for Information Security's approach to building an information security management system
- Develop an understanding of security policy creation, the role of the ISO, and organizational security governance
- Apply secure backup strategies and cybersecurity risk reduction methods to digital health scenarios

KEY TOPICS

Multi – layer IT security model; virus scanners: detection methods; firewall types and configurations; IDS and IPS; honeypots; digital certificates and VPNs; BSI IT Baseline Protection; cyber threats: malware, ransomware, phishing, CEO fraud, DDoS, APT; MITRE ATT&CK framework; access control: DAC, MAC, RBAC; authentication and identity management (JWT, SAML, OAuth); cryptography: symmetric, asymmetric, TLS, E2E; backup and RAID; information security policy.

Countrysanalysis applies the theoretical knowledge acquired in Units 1 – 15 to the analysis of national health systems and Digital Health ecosystems. Each unit examines a different country using a standardised five – section analytical framework. Depending on the country's healthcare system, level of Digital Health maturity, and data availability, certain sections may contain more extensive coverage while others may present limited information.

SECTION 1**Governance, Regulation, and Research in Health (including Digital Health)**

This section identifies and describes the key players in the country's health system, including authorities regulating healthcare services (e.g. Ministry of Health), national institutions in the field of health education and research, guideline development bodies and repositories, professional societies, and evidence resources.

SECTION 2**Health Indicators**

This section presents general and health statistics and key burden of disease data, including demographic indicators, epidemiological profiles, leading causes of death and DALYs, disease – specific prevalence, and health service coverage metrics.

SECTION 3

Health System and Financing

This section describes the country's health system, covering historic highlights, general features and financing (sources of funding and payment systems), health services across primary, acute, chronic, and mental care, facilities and workforce, system performance (cost, quality, access), and major challenges.

SECTION 4

Information and Communication Technology

This section examines the country's ICT landscape, including national ICT policies and strategies, ICT indicators and rankings, industry overview (GDP share, companies, workforce), telecommunication infrastructure, competitive advantages, and challenges and limitations relevant to Digital Health.

SECTION 5

Digital Health Ecosystem

This section analyses the national Digital Health information system, covering the presence of a national Digital Health and AI strategy, responsible authorities, legal frameworks for health data privacy, sharing, and telemedicine, history of development and current situation, main system components and functionalities (EHR, electronic prescribing, telemedicine, patient portals, HIS, decision support), system attributes (infrastructure, architecture, interoperability), consumer Digital Health, funding models, deployment and adoption, and future developments.

LEARNING OBJECTIVES (APPLICABLE TO EACH UNIT)

- Identify the key governance, regulatory, and research bodies in the country's health sector, including Digital Health

- Analyse key health indicators, demographic data, and the burden of disease in the country
- Describe the structure, financing, workforce, and performance of the country's health system
- Assess the country's ICT infrastructure, indicators, and their relevance to Digital Health deployment
- Trace the history and evaluate the current state of the country's national Digital Health information system, including legal frameworks, system components, adoption, and future developments

KEY TOPICS

Governance and regulatory bodies; health indicators and burden of disease; health system structure and financing; health services, facilities, and workforce; ICT indicators, infrastructure, and industry; national Digital Health strategy; Digital Health legal frameworks; health information systems and EHR; electronic prescribing; telemedicine; patient portals; interoperability and health information exchange; consumer Digital Health; adoption, acceptance, and barriers; future developments.

Countries covered:

UNIT 16 Germany	UNIT 17 United States	UNIT 18 Israel	UNIT 19 Canada	UNIT 20 Nigeria
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Teaching and Learning Methods

The course is delivered entirely online through the THD Learning Management System accessed via the VHB platform. The primary teaching medium is the recorded Video Lectures & Reading Material. Students engage with each unit at their own pace within the scheduled semester framework.

Each unit is designed for approximately 135 minutes of core engagement: 40 – 50 minutes of pre – recorded video lecture, 60 – 70 minutes of reading, and 15 – 20 minutes of quiz self – assessment, plus self – study time.

Additional optional activities include:

- Live synchronous class discussions and Q&A sessions facilitated by the course instructors.
- Access to DigiHealthDay, the international Digital Health forum and community organised by DIT – ECRI, as an optional extension activity that promotes continuous learning.

Assessment Strategy

COMPONENT	DESCRIPTION	REQUIREMENT
Unit Quizzes (Units 1 – 20)	Each unit includes an embedded self – assessment quiz.	Min. 70% pass per quiz (required)
Countrysanalysis Report	Structured analytical report following the five – section framework for an assigned or selected country.	Term paper • 10 A4 pages

The Countrysanalysis report is the course's principal assessment, requiring students to integrate knowledge from all modules.

Prerequisites

There are no formal prerequisites.

Workload Breakdown

The course carries 5 ECTS credits, corresponding to a total student workload of 150 academic hours. The workload is distributed as follows (approximation):

ACTIVITY	ACADEMIC HOURS
Pre – recorded video lectures (20 units × 2 lectures)	20
Reading material (20 units)	30
Live class discussions and Q&A sessions (5 times x 2 hours)	10
Unit quiz preparation and completion (20 units × 10 questions)	10
Self – study & further reading	40
Countrysanalysis report: research, writing, and submission	40
TOTAL	150