



THE ACADEMIC ALLIANCE FOR RECONCILIATION, CONFLICT TRANSFORMATION , PEACEBUILDING IN THE MIDDLE EAST AND NORTH AFRICA

AARMENA

TRANSDISCIPLINARY RECONCILIATION PEACE STUDIES

With the support of the
Erasmus+ Programme
of the European Union



AARMENA –Master Program in Digital Humanities

**Cooperation between the University of Jordan
&
Freidrich Schiller University - Jena, Germany**



seit 1558



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AARMENA

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Role	Region	Participant Organisation Name	Country
Contractor	EU	FRIEDRICH-SCHILLER-UNIVERSITAT JENA	DE
Partner	R3	AL AZHAR UNIVERSITY GAZA	PS
Partner	R3	AL-ISTIQLAL UNIVERSITY	PS
Partner	R3	PETRA FOR EDUCATION	JO
Partner	R3	UNIVERSITY OF JORDAN	JO
Partner	EU	UNIVERSITAET INNSBRUCK	AT



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ORIENTATION MODULE UNIT Program Handbook In AARMENA Digital Humanities Master Program

- We propose a modular system in already existing masters at the University of Jordan
- The master program already existing Masters in Computer Science and holds the title:
Master in Computer Science : “Digital Humanities”
- We will proceed through an equivalence method to guarantee an inclusion of
peace and reconciliation content in already existing fundamental education units
for the study of data science using computer science application and methods.



ORIENTATION MODULE UNIT Program Handbook

Program overview:

The MA degree program ,Digital Humanities for Reconciliation Studies is a promising approach for researching Data Science into transforming and understanding violent conflicts and spurring social and cultural change in the MENA region.

General Objectives

Graduates of the program have gained insight into the fundamental research questions of the participating concentrations. They have developed the ability to examine research positions and analysis in the field of Peace, Conflict Transformation, and Reconciliation Studies in the Middle East and North Africa exploring Data Science.



Qualification Profile of AARMENA – Graduates:

- AARMENA – Master Graduates develop the ability to analyze and interpret the causes of domestic and international conflicts in their social, political, and cultural contexts using methods of computer science research methodologies.



Requirements of the Degree Programme

- AARMENA Master Program is an internationally oriented master's program with 120 ECTS(33 Credit Hours). The European Credit Transfer and Accumulation System (ECTS) serves as a reference for calculating the workload of the respective partner universities.
- The Master is offered in hybrid form, where international scholars can record their lectures or provide them via Zoom, WebEx, and integrate highly integrated technological interactive presentation platforms. The partner countries' universities decide in which language they offer their study program.



How to include revision of the already accredited master?



Location: University of Jordan



Earliest start date: October 2021



Languages: Arabic (English)



Pace: Full-time



Duration: 2 years



Application Deadline: **request info***



Study type: hybrid (campus + online)



Tuition fees: based on the Tuition fees policy of University of Jordan,
and If applicable support students from different grants such as Faculty of
Scientific and Research, DADD etc.



Curriculum Program: Master of Science in Computer Science (Digital Humanities):

- A module usually consists of three courses and a final module examination. The partner universities are responsible for their module descriptions and forms of examination. In addition, the partner universities can decide to acquire the type of degree appropriate to their institutions; at the University of Jordan, it will be Master program in computer science in the field of Digital Humanities.
- Depending on the national conditions, the program is divided into modules from the subject mentioned above areas (total 90 ECTS) including research modules , and the module Master's thesis (30 ECTS).



General Rules Conditions:

- 1- This plane conforms to the valid regulations of the program of graduate studies.
- 2- Specialties of admissions either of :
 - a- Bachelor of Computer sciences (Cs)
 - b- Bachelor of Computer Information System(CIS)
 - c- Bachelor of Software engineering
 - d- Bachelor of Business Information System
 - e- Bachelor of Computer engineering
 - f- Bachelor of any specialty within Information technology.



Module 1: Computer Science Core Module

Course Number	Course Title	Credit Hours
1901715	Theory of Algorithms	3
1901761	Operating Systems	3
1901765	Computer Networks	3
1902723	Data Base	3



Module 2: **Peace And Reconciliation Studies in Digital Humanities**

Course Number	Course Title	Credit Hours
1901790	Introduction to peace and reconciliation studies	3
1901789	Digital Humanities and peace and reconciliation studies	3
1901791	Computational intelligence model in Applied Transdisciplinary research	3
1901755	Applied Phronesis In Digital Humanities for reconciliation processes	3



Module 3: Database and Programming Languages

Course Number	Course Title	Credit Hours
1901738	Spatial and Temporal Database	3
1901757	Image Processing	3
1901775	Programming Language Design	3
1902724	Distributed Database	3



Module 4: Distributed Computing and Networking

Course Number	Course Title	Credit Hours
1901717	Theory of Computations and Complexity	3
1901752	Parallel and Distributed Computing	3
1901767	Computer Networks Security	3
1902768	Mobile Location Based Services	3

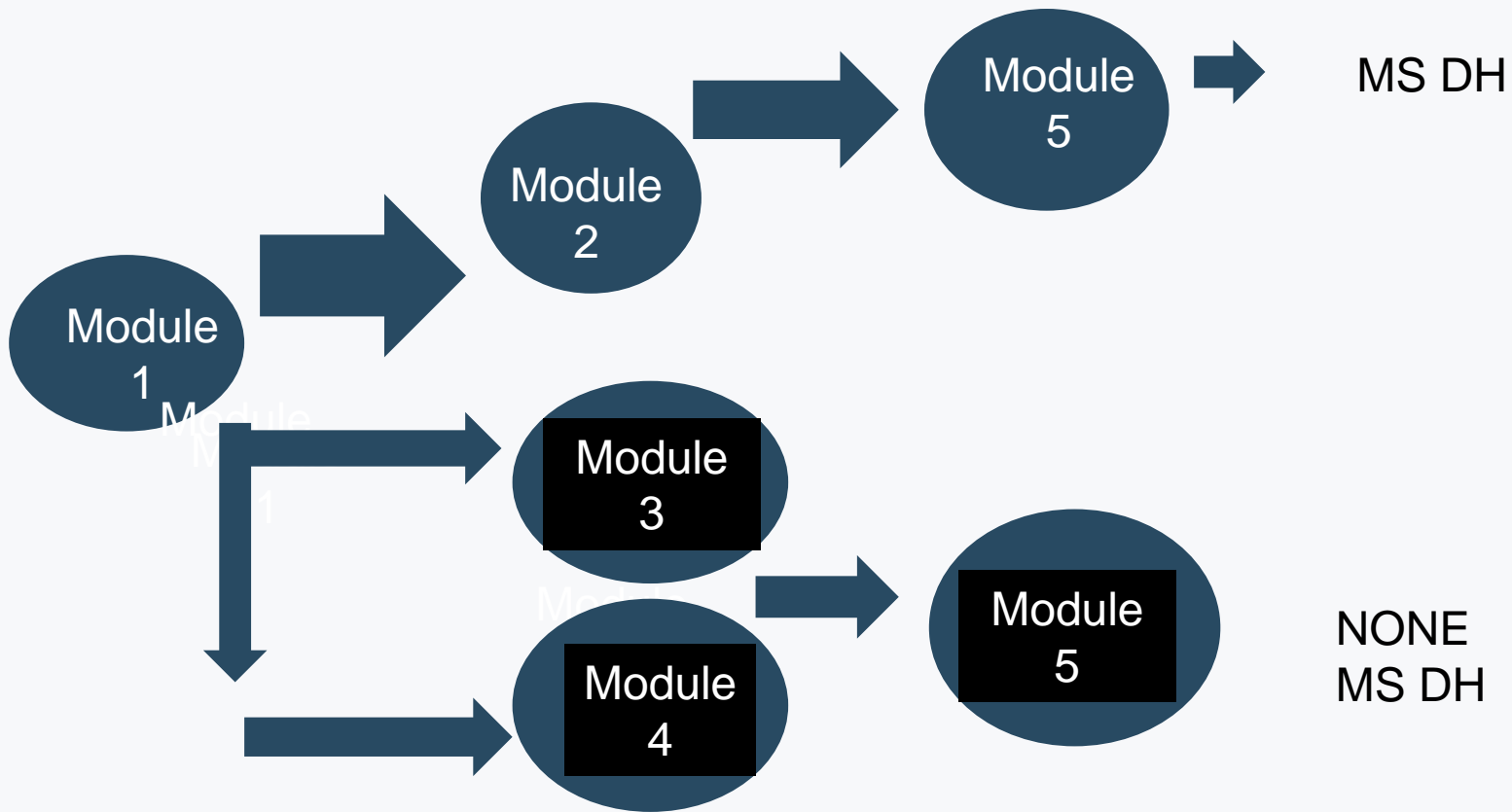


Module 5: Thesis

Course Number	Course Title	Credit Hours
1901799	Thesis	9



- The first year of study modules, students will take the core Module for Graduate Computer Science Classes (Module 1).
- For DH track, students must take Module 1, 2, and 5.
- For none DH track students, they must take, Module 1, and 5, and select either Module 3 or 4





• Model Description

- Students may complete modules amounting to 45 ECTS (12 CR) as international modules at one of the partner universities.
- The students may take the Thesis Module (30 ECT, 9 CR) in cooperation with the partner university.
- Finally, student must take Module 1 (Core Module for Computer Science, 45 ECT, 12 CR) at the University of Jordan.
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- **Assessment:**

- The prerequisite for admission to the research modules in the individual subjects is completing the corresponding subject modules.
- The prerequisite for admission to the Master's thesis module is completing the two modules of the first academic year (90 ECTS, 24 CR).

- **Referencing Requirements**

- Researchers must write according to the rules and regulation of Graduate School at the UJ for the written assignment when citing any resources and when providing support examples based on the researcher's knowledge and expertise.



Technical Requirements

- The researchers must have the ability to use computer-assisted software to gain the maximum ability of the program; such software is the following:
 1. Microsoft word office, PowerPoint office.
 2. Adobe Acrobat Reader.
 3. Computer-Assisted Qualitative Software: Such as MXQDA, Atlas-Ti, or **Nvivo** for Windows
 4. Microsoft Azure software for Machine Learning.
- For any technical assistance, the researcher needs to contact the technical team at the local university.



Access to Future Studies

- When the students complete the program, he has access to enter into a Ph.D. program at the University of Jordan.
- Continue a Ph.D. at AARMENA in Germany.



Jordan University Experience

- Nine Students finished Module 1, 2, and already started Module 5 as follows:
 - Byan Mohammad Fayomi, The Prediction & Influence for online education on higher education institutions using Netnography & machine learning in Jordan.
 - Sajedah Nouyran, Measuring the academic students' performance at the University of Jordan using Netnography methodology.
 - Abeer Abu Zaid, A qualitative content analysis of the social media discourses on the Internet of things at Jordanian universities.
 - Nancy shaar, A decision support system(DSS) for traffic prediction and building a dynamic social media community using Netnography technology.
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Muyad Alkharabsheh, Employing Artificial Intelligence In Combating Cybercrimes

Shrooq Mnaour, Ethical conduct, and regulation for using artificial intelligence application in the higher education institutions in Jordan.

Amani Gareeb, Applied Ethics in Digital Humanities for Decision Distribution in the Educational Process of the Higher Education Institution – A Case Study of the University of Jordan.

Sammer Ahamad, Violence inside universities using Netnography, A Case Study of the University of Jordan.

To be assigned. How Digital Technologies Influence Conflict Dynamics How Peacebuilders Can Respond.....

To be assigned. How Digital Technologies Transform the Field of Peacebuilding.....

To be assigned. The Road Ahead: Shifting from ‘Digital Inclusion’ to ‘Digital Agency’ and Approaching New Fields of Action in Cyberspace

To be assigned. A Virtual Memory for Reconciliation



Publications

- Abeer Abdel-Jabbar Abu-Zayed, **Mohammad Alshraideh**, Prof.Dr. Martin Leiner, Dr Iyad Muhsen AlDajani, Using Machine Learning to predict the effect of IoToys on Universities' students GPA and their Health A Case Study on Jordanian Universities Students, Accepted.
- Abeer Abdel-Jabbar Abu-Zayed, **Mohammad Alshraideh**, Prof.Dr. Martin Leiner , Dr Iyad Muhsen AlDajani, Netnography Internet Research methodology into the Internet of Toys Netnography Internet Research methodology into the Internet of Toys, Accepted.
- Abeer Abdel-Jabbar Abu-Zayed, **Mohammad Alshraideh**, Prof.Dr. Martin Leiner, Dr Iyad Muhsen AlDajani, Netnography Internet Research methodology Applications: A Survey, Accepted.



- Ayah. AlFaouri, **Mohammad. Alshraideh**, Marten Leiner, Ayad. AlDajani, Syrian Refugees Information Prediction System (RIPS) in Germany: Applied Digital Humanities, Journal ARMENIA-Reconciliation with refugees Book, pages 256-273.
- Bayan Alfayoumi, **Mohammad Alshraideh**, Saleh Al-Sharaeh, Martin Leiner, Ayad Muhsen. (2021), Analyzing the Sentiments of Jordanian Students Towards Online Education in the Higher Education Institutions, (IJACSA) International Journal of Advanced Computer Science and Applications, 12(11).
- Bayan Alfayoumi, **Mohammad Alshraideh**, Prof.Dr. Martin Leiner, Dr Iyad Muhsen AlDajani, Machine Learning Predictions for the Advancement of the Online Education in The Higher Education Institutions in Jordan. , Journal of Hunan University Natural Sciences, Volume 48 (9), 2021.
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- Nancy Shaar, **Mohammad Alshraideh**, Prof.Dr. Martin Leiner, Dr Iyad Muhsen AlDajani, A Decision Support System (DSS) for Traffic Prediction and building a dynamic Internet Community using Netnography Technology
- Nancy Shaar, **Mohammad Alshraideh**, Prof.Dr. Martin Leiner, Dr. Iyad Muhsen AlDajani , A comparative study for the traffic predictions in smart cities using the Artificial intelligence techniques: Survey
- Sajeda Alnwairan , **Mohammad Alshraideh**, Prof.Dr. Martin Leiner , Dr Iyad Muhsen AlDajani Students' Performance At The University Of Jordan Using Netnography Methodology
- Bayan Alfayoumi, **Mohammad Alshraideh**, Prof.Dr. Martin Leiner, Dr Iyad Muhsen AlDajani, Influence for online education on higher education institutions using Netnography



Conclusion

- The Masters in Computer Science (Digital Humanities) is an innovative and Interdisciplinary & Transdisciplinary program of the University of Jordan with the universities forming the consortium of the AARMENA CBHE Project.
- The University of Jordan will be the first university in the MENA region to start a master program in digital humanities for reconciliation studies.
- **we already started a plane of study to have an Independent MS in DH , expected to be in the Faculty of Information Technology.**



ACADEMIC ALLIANCE FOR RECONCILIATION IN THE MIDDLE EAST AND NORTH AFRICA (AARMENA-2020)

“Erasmus+ Capacity Building in Higher Education Project Grant Accepted”



FRIEDRICH-SCHILLER-
UNIVERSITÄT
JENA



Erasmus+





Courses Description

- **1901790 Digital Humanities in Transdisciplinary Research Methods** **3 Credit Hours**

This course focuses on research methods, research process, use of research tools and techniques, and writing and presentation skills for young researchers. This course is intended to provide the students with a broad overview of methods and concepts (both quantitative and qualitative research). Students should be confident in using the right methods and tools to analyze data. They will also be able to better design their primary research studies as well as to quickly enter and analyze this information. Mixed-Method Research Design, Inductive, and deductive methods of Internet Communication Technologies research. Ethical considerations conducting online research or digital research

- **1901789 Computational Artificial intelligence model in Applied Transdisciplinary Research** **(3 Credit Hours)**

- Studying how to conduct Netnography, Cybersecurity



1901791 Applied Phronesis In Digital Humanities for reconciliation processes (3 Credit Hours)

This course provides information about the philosophical foundation of Applied Phronesis in Internet Communication Technologies for reconciliation processes. Cybersecurity & Ethical consideration conducting online research in digital humanities research, in addition to Reconciliation in the Middle of conflict (Hölderlin perspective) as an ethical concept and a case study.

1901715 Theory of Algorithms

3 Credit Hours

This course provides Strategies for algorithms synthesis and analysis. Design methodologies of classical algorithm categories such as divide-and-conquer, greedy method, dynamic programming, search and traversal, backtracking, and branch-and-bound. Computational complexity and important theoretical results from lower-and upper-bound studies, NP-hard, and NP-complete problems will be addressed.



1901717 Theory of Computation and Complexity

3 Credit Hours

Finite Automata and Regular Languages, Properties of Finite Automata, Regular Expressions, The Pumping Lemma and Closure Properties; Universal Models of Computation, Encoding Instances, Choosing a Model of Computation, Model Independence, Turing Machines as Enumerators and Acceptors; Computability Theory, Primitive Recursive Functions, Partial Recursive Functions, Arithmetization: Encoding a Turing Machine, Programming Systems, Recursive and R.E. Sets, Rice's Theorem and the Recursion Theorem, Degrees of Unsolvability; Complexity Theory, Reductions, Classes of Complexity, Complete Problems; Some Important NP-Complete Problems, The Complexity of Approximation, Models of Parallel Computation, Communication and Complexity, Interactive Proofs and Probabilistic Proof Checking.



- **1901752 Parallel and Distributed Computing** **3 Credit Hours**
 - The course is centered in three concepts: Architectures, Algorithms and programming. Parallel and Distributed Architectures: Parallel and Distributed computer taxonomy, example of Parallel and Distributed computers, fundamental communication operations, and performance metrics. Parallel algorithms: design and analysis of parallel algorithms with emphasis on sorting, matrix problems, and graph problems. Parallel programming: types of parallelism, parallel programming paradigms, message passing programming, data and parallel programming.
 - 1 Theory
- **1901755 Advanced Methods in Modeling and Simulation** **3 Credit Hours**
 - Advanced concepts of computer simulation; models for computer simulation; random numbers: Pseudorandom number generation and testing, Monte Carlo methods. distribution functions. Simulation modeling: discrete-event simulation, continuous simulation; verification and validation of simulation models: input analysis, output



- **1901761 Operating Systems**

3 Credit Hours

- This course provides Distributed operating systems; Synchronization in distributed operating systems; Process Management in distributed operating systems; Distributed file systems; Distributed shared memory; Real-time operating systems; Scheduling in real-time operating systems.

- **1901765 Computer Networks**

3 Credit Hours

- This course discusses Computer Networks and the Internet, Data Link Layer, Network Layer, Transport Layer Options (Silly Window Syndrome, Delayed ACK , Selective Acknowledgments, Selective Retransmission Request (SRR), Time Stamp, Window Scale); VLANs (Virtual Local Area Networks); Advanced Multimedia-Networking Protocols: Real-time Transmission Protocol (RTP), Real-time Transmission Control Protocol (RTCP), Session Initiation Protocol (SIP); Network-Management Protocols: Simple Network Management protocol (SNMP), Structure of Management Information (SMI), Management Information Base (MIB); Quality of Service (QoS): Integrated Services (Intserv), Resource Reservation protocol (RSVP), Differentiated Service (Diffserv); Asynchronous Transfer Mode (ATM).



- **1902723 Database Systems**

3 Credit Hours

- Advance data modeling concepts: advance relational data modeling, object-oriented data modeling, database design theory, advanced relational algebra, database normalization, object-oriented database design, advanced query languages, advanced relational SQL constructs, object-oriented query languages, database integrity, concurrency control, concurrency problems, concurrency approaches, database recovery, recovery solutions, and approaches, database security.

- **1901713 Formal Compiling Methods**

3 Credit Hours

- This course explores the foundation of Compiler design, principles, techniques & tools. Topics include Compilation Phases, Run-time environments, Machine-Independent Optimization, Instruction-Level Parallelism, Optimizing for Parallelism as Locality, and Interprocedural analysis.



- **1901738 Spatial and Temporal Databases** **3 Credit Hours**
 - This course considers models of spatial databases, and how data is structured, stored, indexed, retrieved, and displayed. Other topics include fuzzy spatial databases, temporal databases, multidimensional access methods, query processing, Spatio-temporal data management, remotely-sensed data, and spatial data mining.
- **1901755 Advanced Methods in Modeling and Simulation** **3 Credit Hours**
 - Advanced concepts of computer simulation; models for computer simulation; random numbers: Pseudorandom number generation and testing, Monte Carlo methods. distribution functions. Simulation modeling: discrete-event simulation, continuous simulation; verification and validation of simulation models: input analysis, output analysis. Queuing theory models; design codes, test and debug simulation programs. Sample applications.



- **1901757 Image Processing**

3 Credit Hours

- The course provides mathematical foundations and practical techniques for digital manipulation of images, image acquisition, representation, preprocessing, segmentation, and compression. Other topics include multi-resolution image processing, wavelets, morphological image processing, noise reduction and restoration, simple feature extraction and recognition tasks, image registration.

- **1902724 Distributed Database**

3 Credit Hours

- Distributed database management system (DDBMS) architecture: Standardization, Models, Alternative, Distributed Database Design, Strategies, Design issues, fragmentations, allocation, distributed database interoperability, distributed database heterogeneity, schema translation, global schema construction, global and local query processing, distributed transaction management, distributed DBMS concurrency control, distributed DBMS recovery and reliability.



- **1901767 Computer Network Security**

3 Credit Hours

- Advance topics in Cryptography; Authentication; Integrity; Key Distribution and Certification; Access Control: Firewalls; Attacks and Countermeasures: Mapping, Packet Sniffing, IP Spoofing, Denial-of-Service and Distributed Denial-of-Service Attacks, Hijacking; Security in Many Layers: HTTPS, Secure E-mail, Secure Sockets Layer (SSL) and Transport Layer Security (TLS), IPsec, Security in wireless networks such as IEEE 802.11, Mobile agents security.

- **1901768 Mobile Location Based Services (MLBS)**

3 Credit Hours

- MLBS applications: usage area, taxonomy, privacy, marketing; The development of MLBS: performance considerations; Navigation systems: spatial database, gateway services, route determination location utility services,...; MLBS and data management: middleware for MLBS protocol, content modeling, update management, linear referencing; MLBS interoperability and standards; MLBS data collection: satellite positioning systems, indoor positioning systems, network-based positioning; MLBS data transmission in Mobile communication systems: cellular-based mobile, wireless local area networks, ad-hoc networking, and service discovery.



- **1901775 Programming Languages Design**

3 Credit Hours

- This course discusses advanced principles underlying current programming languages and models. Topics include control and data abstractions, language processing and binding, indeterminacy and delayed evaluation, and languages and models for parallel and distributed processing. A variety of computational paradigms are discussed: functional programming, logic programming, object-oriented programming and data flow programming.