



Report on Accreditation of Study Programs

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Abstract	This is the report about current phase of accreditation procedure of study programs at three partner universities in Serbia: University of Nis, University of Novi Sad, and University of Belgrade.
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VERSIONING AND CONTRIBUTION HISTORY

Version	Date	Revision description	Partner responsible
V 1.0	31/03/2020	First version	UNI

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Description of Accreditation Procedure in HE of Serbia

Accreditation procedure start at institutional level. Every study program needs the approval from the following decision bodies: Departments – Council of Teachers at faculties – Check of the program through software of NAT - Quality Committee at University – Expert Council – Senate of the university. Afterwards study program can be submitted to the National Accreditation Body (NAT).

Accreditation process is done fully in accordance with the EQAR (European Quality Assurance Register) Guidelines. NAT of Serbia is member of the EQUAR.

Procedure at NAT: Reception of full documentation on study program from institution – Nomination of peer reviewers by Director of NAT (usually 2 for study program) – Per review procedure (2 months maximum) – Decision of Accreditation Committee on the basis of the reports from peer reviewers.

Status of Accreditation Procedures of ADA Master at UNS, UB, and UNI

University of Novi Sad: After consultations with Tempus office in Serbia and other stakeholders, and with the approval of project officer in EACEA, we have changed the structure of our master study program Advanced Data Analytics in Business. We have expanded the program and make the master with total of 120 ECTS, lasting two years, instead of previous proposal of 90 ECTS and one and a half year. We have introduced additional courses and increased the number of hours and ECTS for already existing courses.

The transformation has been implemented at University of Novi Sad, while University of Belgrade and University of Nis have decided to continue with 90 ECTS program, as planned originally in the project proposal.

The reason for the change is that we want to enable foreign students to be enrolled more easily, because most of them will come to us with 180 ECTS. If we keep the previous version (90 ECTS), we have to require from foreign students to have 240 ECTS in order to be enrolled at master program. That means that most of potential foreign students will have to find the way to provide additional 60 ECTS in order to come to study in Serbia. It is enormous barrier for them. This is general problem in all master study programs in our country.

Since UNS will develop master study program with 120 ECTS, it will be 100% compatible with EHEA, while potential students from Serbia will be enrolled with 240 ECTS, after 4 years of bachelor study. Anyway, we believe that Serbian students will be still interested to enrol 2 years' study program because of its attractiveness and quality. Through our dissemination activities we have noticed significant interest not only from potential students, but also from the companies.

So far, at UNS, we have developed and prepared all material necessary for the accreditation of study program (in Serbian and English): Curriculum, syllabus, approvals for visiting professors from EU, approval of Quality Committee at UNS, approval from the Expert Council for Social Sciences, etc. Also, we have passed the check through accreditation software developed by National Accreditation Body. The next step is to submit study program for accreditation to National Accreditation Body, right after the approval of Senate of UNS. The plan was to make submission by the end of March 2020, and after the accreditation enrol the first students in October 2020. Unfortunately, due to recent development of situation with Covid-19 virus, we can expect that work of National Accreditation Body in Serbia will be delayed, which means that we must postpone the enrolment of first generation at ADA master to October 2021.

All material already prepared for the accreditation is on the following link: <http://www.ada.ac.rs/study-programs/> .

UB has developed its new master study program, Advanced data analytics. It primarily targets students interested in technology of advanced data analytics, as well as those interested in applications related to medicine, social sciences and scientific computation. The program has been officially approved by the Senate of the University of Belgrade and is now getting ready for submission for accreditation to the National Accreditation Body of the Republic of Serbia.

It is a 3-semester, 90 ECTS program, with courses covering topics from all "three pillars of data science", i.e. math and statistics, computer science, and different application domains. The program is practically oriented – the classes and labs in all courses are envisioned and structured in such a way that problem-based and project-based learning is enforced. Solving real-world, practical problems is in the heart of the teaching and learning methodology to be used in the program implementation. Moreover, the final semester courses are all application-oriented, and envisioned to be a starting point to the mandatory internship. During the internship, the students will work on practical problems and these, in turn, will be the basis for their master theses.

The structure of the Advanced data analytics program at UB and the course specifications are published at the project Website: <http://www.ada.ac.rs/sp-ubg/>.

Similar to the study program developed at UNS, the plan for the Advanced data analytics program at UB was to submit it for accreditation by the end of March 2020, and, if the accreditation is approved by the National Accreditation Body of the Republic of Serbia, enrol the first generation of students in October 2020. Unfortunately, due to the recent development of the situation with Covid-19 virus, UB expects the accreditation of the Advanced data analytics program only in the second half of 2020. Hence the enrolment of the first generation of students is expected only in October 2021.

At the moment, the accreditation process of ADA in Business master course at the University of Niš is in phase of waiting for the approval of the Senate of UNI. Initially, it was planned to be adopted at Senate meeting that was scheduled for the middle of April 2020 and to submit study program for accreditation to National Accreditation Body just after Senate UNI approval. However, due the pandemic crisis with Covid-19, all meetings at UNI are cancelled and delayed as soon as the situation allows. The materials will be submitted to National Accreditation Body, right after the approval of Senate of UNI. Having in mind recent development of situation, it is expected that the enrolment of first generation at ADA in Business master course at the University of Niš will be postponed to October 2021.

According to project proposal, University of Kragujevac is not developing the study program in business analytics. They are participating in the development of LLL courses.

Appendix: List of courses at three universities

University of Novi Sad

Title of the course	New / Updated	Volume in ECTS	Level of achievement
Quantitative Fundamentals	New	7	100%
Managing, Storage and Visualising Big Data	New	7	100%
Social Media Analytics	New	7	100%
R for Data Science	New	7	100%
Machine Learning	New	7	100%
Big Data Fundamentals	New	7	100%
Time Series	Updated	7	100%
Business Cases	New	7	100%
Designing communication of results	New	7	100%
Academic Writing	New	7	100%
Business & Decision Modelling	New	7	100%
Supply chain & Operational Analytics	Updated	7	100%

Digital Marketing Analytics	Updated	7	100%
Financial Analytics	Updated	7	100%
Advanced Analytics with SPSS	New	7	100%
Transaction-based analytics & Recommendation systems	New	7	100%
Deep Learning	New	7	100%
Advanced Econometrics	Updated	7	100%

University of Belgrade

Title of the course	New / Updated	Volume in ECTS	Level of achievement
Mathematical Basics of Data Analysis	New	10	100%
Discrete Structures	New	10	100%
Analytics and Optimization	New	10	100%
Introduction into Statistical Interference	New	10	100%
Models of Statistical Learning	New	10	100%
Introduction into Theory of Complex Networks	New	10	100%
Artificial Intelligence / Machine Learning	New	10	100%
Programing	New	10	100%
Data Bases	New	10	100%
Big Data Analytics	New	10	100%
Data Visualisation	New	10	100%
Neural Networks and Deep Learning	New	10	100%

Computer Text Mining	New	10	100%
Computer Social Network Analysis	New	10	100%
Introduction to Time Series Analysis	New	10	100%
Data Analysis in Fundamental and Clinical Medicine	New	7	100%
Data Analysis in Biological Sciences	New	7	100%
Big Data Sets and Social Sciences	New	7	100%
Advanced Data Analytics in Social Sciences	New	7	100%
Analysis of International Data Bases	New	7	100%
Practical Analysis of Forested and Non-homogeneous Time Series	New	7	100%

University of Niš

Title of the course	New / Updated	Volume in ECTS	Level of achievement
Programming for Business Applications 1	New	6	100%
Introduction to Machine Learning in Business	New	6	100%
Optimization and Business Decision-Making	New	6	100%
Research Design and Data Visualization Techniques	New	6	100%
Marketing Intelligence	New	6	100%
Text Processing	New	6	100%
Mathematics and Statistics in Business Analysis	New	6	100%

Fundamentals of Accounting and Business Finance	New	6	100%
Time Series Forecasting	New	6	100%
Applied Econometrics	New	6	100%
Quantitative Finance	New	6	100%
Programming for Business Applications 2	New	6	100%
Advanced Big Data Analytics	New	6	100%
Network and Online Business Analytics	New	6	100%
Data Acquisition	New	6	100%
Academic writing	New	6	100%