**QUALITY ASSESSMENT BY EU PARTNERS (PARTNER ESTONIAN UNIVERSITY OF LIFE SCIENCES)**

# Elective course: “Advances in the natural science”

# Khovd University of Mongolia

# MSc and PhD courses

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| **QUALITY ASSESSMENT** |
| Quality criteria 1: Number of credit units for lectures, practical sessions and self-learning are appropriate to the contents |
| * *Evaluation*   The course assigns 30 hours for each type of activity, namely lectures, moderated in-class discussions, in-class assignments, paper review and discussion, and independent work on basic concepts and definitions. Thus, the number of credits for each activity is balanced and appropriate to the contents.   * *Strategies for improvement*   No strategies for improvement required. |
| Quality criteria 2: Total number of credit units in the course is correct and appropriate |
| * *Evaluation*   The total number of credits units assigned for this course is 3 ECTS. However, a workload of 150 hours would be more appropriate for a 5-ECTS course.   * *Strategies for improvement*   One option would be assigning a larger amount of credits for this course. Another option would be to reduce the workload by merging some in-class activities, which constitute most of it. Taking into account the importance of students’ engament and participation on learning outcomes, it would be recommended to maintain activities that envolve individual and group learning. To assist in this regard, the following materials provide some guidelines for credit assignment for academic courses:   * <https://provost.illinois.edu/policies/policies/courses/credit-hour-definition/assigning-credit-hours/> * <https://www.bu.edu/policies/credit-assignment-to-academic-courses/> * <https://www.eur.nl/sites/corporate/files/15_Studielastberekening_juli_2007_ENd.pdf> |
| Quality criteria 3: Positioning of the courses in Curricula is appropriate based on the progressive level of difficulty |
| * *Evaluation*   The syllabus does not explicitly mention the positioning of the course in curricula, but it assigns prerequisites for registration, which reflects a progression on the level of difficulty. In this way, it seems to be appropriate.   * *Strategies for improvement*   Explicitly stating the expected position of the course in the curricula. Perhaps using a curricula map may assist in this concern, for example: <https://www.unco.edu/center-enhancement-teaching-learning/pdf/assessment/program-curriculum-mapping-quick-guide.pdf> |
| Quality criteria 4: Tests are suitable and appropriate to support transferable skills |
| * *Evaluation*   The assignments for evaluating the transfer of skills seems to be adequate for the course’s objectives. However, the methodology for measuring students’ performance is not clear. For example, summing the contribution of each assignement, students grade could reach 120%, according to the syllabus.   * *Strategies for improvement*   Reassigning weights for each assignment in a way it reaches 100%. |
| Quality criteria 5: TLM and assessment strategy support students in undertaking the course i.e. prerequisites are helpful and relevant, assessments help gauge students understanding |
| * *Evaluation*   The prerequisites for this course are geography and environmental Sciences, landscape studies, Soil geography, and organic chemistry, which are appropriate and necessary for carrying out the course’s assignments and to maximize the learning outcomes.   * *Strategies for improvement*   Including more recent material on this topics in the mandatory literature could be beneficial and relevant for achieving teaching and learning outcomes. Some recommendations for this purpose are:   * Xie, H.; Zhang, Y.; Wu, Z.; Lv, T. A Bibliometric Analysis on Land Degradation: Current Status, Development, and Future Directions. Land 2020, 9, 28. <https://doi.org/10.3390/land9010028> * Wang J, Bretz M, Dewan MA, Delavar MA. Machine learning in modelling land-use and land cover-change (LULCC): Current status, challenges and prospects. Science of The Total Environment. 2022 Jan 31:153559. <https://doi.org/10.1016/j.scitotenv.2022.153559> * Toth C, Jóźków G. Remote sensing platforms and sensors: A survey. ISPRS Journal of Photogrammetry and Remote Sensing. 2016 May 1;115:22-36. <https://doi.org/10.1016/j.isprsjprs.2015.10.004> * Foxcroft, L.C., Pyšek, P., Richardson, D.M. et al. Plant invasion science in protected areas: progress and priorities. Biol Invasions 19, 1353–1378 (2017). <https://doi.org/10.1007/s10530-016-1367-z> * Heaphy M, Watt MS, Dash JP, Pearse GD. UAVs for data collection-plugging the gap. New Zealand Journal of Forestry. 2017 May;62(1):23-30. <http://nzjf.org.nz/abstract.php?volume_issue=j62_1&first_page=23> * Spigarelli C, Zuliani A, Battini M, Mattiello S, Bovolenta S. Welfare assessment on pasture: A review on animal-based measures for ruminants. Animals. 2020 Apr 2;10(4):609. <https://doi.org/10.3390/ani10040609> * Aquilani C, Confessore A, Bozzi R, Sirtori F, Pugliese C. Review: Precision livestock farming technologies in pasture-based livestock systems. Animal. 16 (1), 100429. <https://doi.org/10.1016/j.animal.2021.100429> * Y. Liu, X. Ma, L. Shu, G. P. Hancke and A. M. Abu-Mahfouz, "From Industry 4.0 to Agriculture 4.0: Current Status, Enabling Technologies, and Research Challenges," in IEEE Transactions on Industrial Informatics, vol. 17, no. 6, pp. 4322-4334, June 2021, <https://doi.org/10.1109/TII.2020.3003910> * Brevik EC, Slaughter L, Singh BR, Steffan JJ, Collier D, Barnhart P, Pereira P. Soil and human health: current status and future needs. Air, Soil and Water Research. 2020 Jun;13:1178622120934441. <https://doi.org/10.1177/1178622120934441> |
| Quality criteria 6: Theory/Practice-oriented components are sufficient to cater the learning outcomes and skills  development |
| * *Evaluation*   The theoretical and practical components are balanced and relevant for the purpose of the course, and may promote the achievement of learning outcomes and skills development.   * *Strategies for improvement*   No strategies for improvement required. |

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