

Discussion on the Graduation Requirements Reaching Degree Evaluation on Agricultural Hydraulic Engineering Course Teaching

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Abstract: According to the relevant requirements of the Certification Association of the Ministry of Education, and the engineering education professional certification carried out by Agricultural Hydraulic Engineering Major of Shihezi University in recent years, combined with the course setting of Agricultural Hydraulic Engineering Major of Shihezi University, the decomposition of index points of graduation requirements, corresponding relationship between professional course teaching and certification index points, this paper explores and practices the reaching degree evaluation methods of professional courses in terms of Graduation Requirements Reaching Degree Evaluation on theoretical courses. The evaluation results of professional courses reaching degree of Agricultural Hydraulic Engineering indicate that the graduates trained in this major are very in line with social needs, and the graduation requirements can also fully achieve the training goals.

Keywords: Agricultural Hydraulic Engineering; Course teaching; Graduation requirements; Reaching Degree

Fund Project:

Foundation item: National Water Conservancy Higher Education Teaching Reform Project: Research and Practice on the Strong Practice Training Model for Graduate Students majoring in Water Conservancy (China Association of Hydraulic Engineering Education [2023] No. 32);

The Shihezi University education reform project: Reform and innovation of integrated training model of water resources talents in the context of "Digital China" (No. 2023Y-JG04).

According to the relevant requirements of the Certification Association of the Ministry of Education, the major of Agricultural Hydraulic Engineering of Shihezi University has carried out several rounds of engineering education professional certification. The engineering education professional certification helps further sort out and standardize the teaching management of Agricultural Hydraulic Engineering major of Shihezi University, and improve the teaching management and teaching level. The Reaching Degree Evaluation on Agricultural Hydraulic Engineering major courses is one of the important tasks for the engineering education and professional certification. The major of Agricultural Hydraulic Engineering of Shihezi University has carried out several rounds of "engineering education certification". According to the certification of theoretical courses reaching degree evaluation of Agricultural Hydraulic Engineering Major in Shihezi University, this paper discusses the understanding and practice of Agricultural Hydraulic Engineering Major about the graduation requirement reaching degree evaluation.

1. Goal-oriented Agricultural Hydraulic Engineering Curriculum Setting

The core concept of engineering education professional certification has been deeply rooted in the hearts of every educator, that is, "student-centered, results-oriented, continuous improvement". In accordance with the general standards of engineering education certification and the professional standards of agricultural hydraulic engineering certification, we must first clarify the training objectives of professional courses based on goal orientation to ensure that the professional training program is in line with the requirements of the certification concept. The professional certification in recent years fully proved that the training objectives and

current training programs of agricultural hydraulic engineering major in Shihezi University meet the certification requirements. The agricultural hydraulic engineering major in Shihezi University fully combines the experience of relevant domestic universities to enable that the curriculum of the training program is consistent with the completion of graduation requirements.

2. The Corresponding Relationship between the Basic Requirements of the Professional Training Program and the Graduation Requirements in the Certification Standards

According to the general requirements on knowledge, ability and quality of the training goal, the training goal of the personnel training program for this major is graduates of this major can meet the 12 graduation requirements of the engineering education certification standard after four years of college study.

The training objectives of the training program for this major can be divided into the following six sub-objectives:

The first is to cultivate the professional talents of agricultural hydraulic engineering with innovative spirit, practical ability, good humanistic quality and professional ethics, who can bear social responsibility; The second is to cultivate engineering and technical talents who have solid basic theories and basic skills of agricultural hydraulic engineering, can engage in relevant professional departments of agricultural hydraulic engineering, and can carry out hydraulic engineering investigation, planning, design, construction, management and research, etc. The third is that the graduates have the employability in the fields related to agricultural hydraulic engineering, and have certain ability to enter the postgraduate stage of study; The fourth is that graduates can continue to expand their knowledge and abilities through continuing education or other lifelong learning channels; The fifth is that after working for 5 years from employment, graduates will obtain the title of engineer or equivalent work ability; The sixth is to be able to effectively play a role as a member or leader in the work team.

The graduation requirements of this major systematically describe the ability training of graduates in various aspects such as professional knowledge, ability and quality, and make targeted training arrangements to provide basic conditions and corresponding support for the achievement of training goals of the major. The graduates who meet the graduation requirements have systematically mastered the basic theories needed in the design, construction and management of agricultural engineering and have a solid foundation; They obtained necessary basic training on the engineering design methods, construction technology management methods and scientific research methods. Their ability is strong in engineering design and implementation; Innovation Experiment for College Students and other activities can cultivate students' innovative awareness, comprehensively improve their comprehensive quality, make them be competent in engineering design, construction and project management in water conservancy, civil engineering, transportation, electric power and other industries, and be able to meet the needs of the construction and development of future agricultural hydraulic engineering. After 5 years of practical work, graduates can have the ability to solve complex engineering problems and play an effective role as a technical backbone or leader in a work team.

3. Discussion on the Evaluation Method of Graduation Requirements Reaching Degree of Theoretical Courses

In order to ensure the achievement of graduation requirements, agricultural hydraulic engineering major of Shihezi University conducted a comprehensive assessment of the achievement of each of the 12 graduation requirements in a two-year cycle. The evaluators include: the deputy dean in charge of teaching, the expert of the teaching steering group, the leader of the Academic Affairs Office in charge of teaching, the director of the teaching department, the teacher of this major, the teaching secretary of the college, the teacher in charge of student employment and the employer.

3.1 The principles and basis of course reaching degree evaluation

Based on the course assessment materials that decompose each index point corresponding to the reaching degree of each graduation requirement, the evaluation is on the reaching degree of graduation requirements for all teaching stages of the course (including practical teaching stages). The reaching degree evaluation results of graduation requirements are calculated by the reaching degree evaluation results of all courses in the major. Course assessment materials include: examination papers of courses, final essay of courses, experimental (internship, design) reports of courses, transcripts, scoring criteria, etc. Based on the evaluation results of all courses in the major, we add them together to obtain the reaching degree evaluation results of the corresponding graduation requirement index points and obtain the reaching degree evaluation results of the graduation requirement.

3.2 The weight assignment of participating in reaching degree evaluation courses to the index point support

Before carrying out course reaching degree evaluation, the Academic Committee of the College shall appoint a special person

to confirm the rationality of the evaluation basis for the course,including course papers,course assignments,course reports,course designs,etc.:(1)whether the difficulty,score and coverage of the course questions meet the assessment requirements of the corresponding graduation requirement index points;(2)Whether course examinations,course assignments,course design and other assessment forms meet the ability requirements listed in this index point;(3)Whether the result is judged strictly.The first evaluation is whether the difficulty of the test paper or report is moderate?Is the score distribution of the test paper or report reasonable?Based on this,it is determined that the result is“reasonable”or“unreasonable”.If the evaluation is“unreasonable”,the above test paper or report cannot be used as the basis for reaching degree evaluation;(4)The academic Committee designates the evaluation team to assign the weight of the target value of the reaching degree evaluation,divide the specific graduation requirements into several index points,determine the corresponding courses supporting each index point,and set the weight value of the reaching degree evaluation goal according to its support strength.The sum of the weight values is equal to 1.

3.3 The professional courses reaching degree evaluation method

Based on the assessment results of students(including course papers,course assignments,course reports,course designs,etc.),combined with the reaching degree evaluation of graduation requirements index points,the course evaluation value is calculated.The method is as follows:

All courses corresponding to 1 index point of graduation requirements of this major are sampled by 0-20%of the number of students who selected the courses in the grade(covering good,medium and poor).Then,courses'calculations on the evaluation value of the reaching degree of a certain graduation requirement index point.It is the ratio of the average score of the graduation requirement index point related test questions in the sample to the total score of the graduation requirement index point related test questions in the sample.

4. The Reaching Degree Evaluation Results

The reaching degree evaluation results of Agricultural Hydraulic Engineering major of Shihezi University are combined with the qualification standards stipulated by the“evaluation mechanism”and the graduation requirements of each sub-item to stipulate that the minimum value of the evaluation result is the evaluation result of final graduation requirement reaching degree.The evaluation results show that the graduation requirements of this major clearly explain the knowledge structure,various abilities and quality requirements of graduates,and provide the necessary basic conditions for the achievement of training goals.

The graduates who meet the graduation requirements have systematically mastered the basic theories and basic knowledge necessary for the construction and management of hydraulic engineering;During the study period,the graduates have been trained on necessary engineering planning and design and have learned basic construction management methods,and have had strong engineering design and implementation ability;After entering the workforce,graduates can achieve their training goals and have broad career development prospects through 1-3 years of vocational training,3-5 years or more of practical work experience accumulation,and the improvement of their abilities and qualities.Through the survey and information gathering for the career development of the graduates of 2008,2009 and 2010,the results show that the 174 students who graduated in these three years have become the backbone of their respective units and the backbone of the industry after 8 years of training and growth,no matter in water conservancy or related industries and other industries.The medium-and long-term development of these students shows that the students of this major have strong working ability and the ability to meet the needs of work.The graduates of this major meet the needs of society,and the graduation requirements can help achieve the training goals.

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