

Army Warrant Officer Career Fields Curriculum Transferability into Four-year Technology Programs

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There are forty-three career fields for technical warrant officers in the United States Army. Warrant officers enjoy the privileges of an officer, and according to the Army's website, "technical warrant officers are the Army's mechanical experts". Qualification training for warrant officers is generally several months to a year in duration of fulltime study, but many warrant officers do not have four-year college degrees.

The American Council on Education (ACE), based out of Washington, D.C., reviews military training courses, including Army warrant officer courses, and makes credit recommendations of equivalent college credits based upon training durations, content and scope. Technical warrant officer training includes the types of curriculum often found in four-year, engineering technology college courses. In addition, warrant officers operate as leaders in their units, not only providing technical expertise, but also managing, planning, organizing, supervising and controlling jobs and worksites in a military setting.

How does warrant officer training compare to technology or business courses in a typical four-year college? This paper examines the ACE credit recommendations for ten current warrant officer specialty courses with technology containing curriculum to compare them to typical technology courses accredited by ABET, formerly the Accreditation Board for Engineering and Technology [3]. In most cases, the training does not warrant credit recommendations for significant amounts of technical training, but the credit recommendations observed appeared to be better applied to a typical business administration or construction management course of study. The amounts and types of credit recommended by ACE reviewers is also discussed, and recommendations are made to help direct warrant officers exiting the service towards the shortest path to a four-year degree.

Introduction

Warrant officers in the United States Army are a special type of soldier. The job specialties filled by warrant officers are technical, the Army's mechanics [1]. These specialties do not require a four-year degree prior to entering the service as is typical for commissioned officers. Many warrant officers do not have four-year degrees. They work in technical job fields and receive military training in their specific specialty. Much of this training receives college level credit recommendations by the American Council on Education (ACE) [2]. They also have all the educational benefits afforded to other members of the

services. For these reasons, warrant officers make great candidates for technical programs accredited by the Accreditation Board of Engineering and Technology (ABET).

The Engineering Technology Accreditation Commission (ETAC) of ABET, Criterion 5, requires technical, professional and general education courses. A core of technology coursework for accreditation is required which, in addition to other obligations, must include [3]:

1. Integral and differential calculus, or other mathematics above the level of algebra and trigonometry, appropriate to the student outcomes and the discipline;
2. Design topics such as those related to industry and engineering codes and standards.
3. Topics related to professional responsibilities, ethical responsibilities, respect for diversity, and quality and continuous improvement;
4. Physical or natural science content of the curriculum appropriate to the discipline and must include laboratory experiences.
5. At least one-third of the total credit hours for the curriculum but no more than two-thirds of the total credit hours for the curriculum must be technical in nature.
6. A capstone or integrating experience that develops student competencies in applying both technical and non-technical skills in solving problems.
7. Development of student competency in the discipline.
8. When used to satisfy degree requirements, credits based upon cooperative/internships or similar experiences must include an appropriate academic component evaluated by a member of the program faculty.
9. An advisory committee with representation from organizations being served by the program graduates must periodically review the program's educational objectives and curriculum. The advisory committee must provide advisement on current and future aspects of the technical fields for which the graduates are being prepared.

This study reviewed sixteen warrant officer training courses and occupations for fit to ABET curriculum requirements. Courses most recently reviewed by ACE were chosen for the study. Military courses are typically reviewed by ACE on a 10-year cycle. The credit recommendations

related to the sixteen courses were listed, grouped into common themes, and compared to ABET's requirements.

Discussion

The sixteen warrant officer courses reviewed were:

1. Allied Trades Warrant Officer Advanced (WOAC)
2. Allied Trades Warrant Officer Basic Course (WOBC)
3. Armament Repair Technician Warrant Officer Advanced
4. Aviation Maintenance Technician Warrant Officer Advanced
5. Aviation Maintenance Technician Warrant Officer Basic
6. Electronic Systems Maintenance Technician Warrant Officer (WOBC)
7. Engineer Equipment Maintenance Warrant Officer Advanced (WOAC)
8. Engineer Equipment Repair Technician Senior Warrant Officer Reserve
9. Engineer Equipment Repair Technician Warrant Officer Technical Tactical Certification Reserve
10. Maneuver Forward Air Defense Technician Warrant Officer Technical Tactical Certification
11. Marine Engineering Officer- Warrant Officer Basic
12. Military Personnel Technician Warrant Officer Basic
13. Patriot System Technician Warrant Officer Basic
14. Petroleum Systems Technician Warrant Officer Advanced
15. Utilities Operation and Maintenance Technician Senior Warrant Officer Advanced
16. Utilities Operation and Maintenance Technician Warrant Officer Basic

This list includes warrant officer “basic” courses which a warrant officer typically attends during his initial enlistment at the warrant rank. Also included is the warrant officer “advanced” courses which are typically attended during subsequent tours to initial entry. Also included are “reserve” courses which are attended by warrant officers in the Reserve Component Forces of the US Army. These courses typically contain the same credit recommendations as the “active” component courses [1]. In summary, eleven different warrant officer fields are represented in the sample if advanced and basic courses are combined with four fields where advanced, basic and occupational reviews are included in the sample.

Based upon the findings of this study, warrant officers typically receive in excess of 50 semester hours of college credit recommendations in the coursework and occupational reviews performed by ACE per course, so a warrant officer attending both the basic and advanced courses related to their specialties would receive roughly between 60 and 90 semester hours of college credit

recommendations. The vast majority of credit recommendations by ACE for all warrant officer courses were made in management and supervision subjects. Table 1 provides a summary of the subjects by course which received credit recommendations. Upon first review, US Army warrant officer training does not fit well with ETAC of ABET curriculum requirements. There are no math or physical sciences subjects in any of the credit recommendation lists. Most courses have a technical subject (mechanical, electrical, surveying, etc.) recommendation, but these are on a case by case basis. The other ETAC of ABET curriculum requirements listed could be argued as being met by warrant officer military training and experiences, but in most cases, the courses appear to be better suited to a Business Administration degree than an Engineering Technology degree since they relate more heavily to management and supervision.

Warrant Officer Job Specialty	Technical	Business	Computers
Allied Trades Warrant Officer Advanced	24	21	6
Allied Trades Warrant Officer Basic Course	21	15	6
Armament Repair Technician Warrant Officer Advanced	12	36	0
Aviation Maintenance Technician Warrant Officer Advanced	3	36	0
Aviation Maintenance Technician Warrant Officer Basic	3	24	0
Electronic Systems Maintenance Technician Warrant Officer Basic	3	54	0
Engineer Equipment Maintenance Warrant Officer Advanced	3	63	0
Engineer Equipment Repair Technician Senior Warrant Officer Reserve	4	48	3
Engineer Equipment Repair Technician Warrant Officer Technical Tactical Certification Reserve	6	48	3
Maneuver Forward Air Defense Technician Warrant Officer Technical Tactical Certification	0	51	3
Marine Engineering Officer- Warrant Officer Basic	33	27	0
Military Personnel Technician Warrant Officer Basic	0	18	3
Patriot System Technician Warrant Officer Basic	12	36	0
Petroleum Systems Technician Warrant Officer Advanced	12		0
Utilities Operation and Maintenance Technician Senior Warrant Officer Advanced	15	24	0
Utilities Operation and Maintenance Technician Warrant Officer Basic	18	45	3

While the coursework received by Army warrant officers does not appear to be well suited for ETAC of ABET programs, warrant officers may be good candidates for ETAC programs

because they have experience in their technical field, and all the management and supervision credit may be applied to the general studies required of nearly all universities to meet regional accreditation requirements in about a the third of the coursework ABET does not cover in their curriculum requirements, generally speaking.

Conclusions

While course to course transfer of military credit to university ABET programs does not appear feasible, warrant officers may make good candidates for these programs since they receive technical training in their job specialty and receive substantial experience on the job in their specialty. ABET may partner with ACE to recognize the training of US Army warrant officers, and warrant ranks of the other US armed services.

References

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