

III. SCIENTIFIC AND TECHNICAL TRAINING REQUIREMENTS FOR ADMISSION TO THE EXAMINATION

An applicant applying for the examination must demonstrate that he or she possesses the scientific and technical training necessary to provide valuable service to patent applicants. *Applicants bear the burden of showing the requisite scientific and technical training.* To be admitted to the examination, each applicant must demonstrate possession of the required scientific and technical training.

A. CATEGORY A: *Bachelor's Degree in a Recognized Technical Subject.* An applicant will be considered to have established to the satisfaction of the OED Director that he or she possesses the necessary scientific and technical training if he or she provides an official transcript showing that a Bachelor's degree was awarded in one of the following subjects by an accredited United States college or university, or that the equivalent to a Bachelor's degree was awarded by a foreign university in one of the following subjects:

Biology	Pharmacology	Electrochemical Engineering
Biochemistry	Physics	Engineering Physics
Botany	Textile Technology	General Engineering
Computer Science*	Aeronautical Engineering	Geological Engineering
Electronics Technology	Agricultural Engineering	Industrial Engineering
Food Technology	Biomedical Engineering	Mechanical Engineering
General Chemistry	Ceramic Engineering	Metallurgical Engineering
Marine Technology	Chemical Engineering	Mining Engineering
Microbiology	Civil Engineering	Nuclear Engineering
Molecular Biology	Computer Engineering	Petroleum Engineering
Organic Chemistry	Electrical Engineering	

*Acceptable Computer Science degrees must be accredited by the Computer Science Accreditation Commission (CSAC) of the Computing Sciences Accreditation Board (CSAB), or by the Computing Accreditation Commission (CAC) of the Accreditation Board for Engineering and Technology (ABET), on or before the date the degree was awarded. Computer science degrees that are accredited may be found on the Internet (<http://www.abet.org>).

An applicant with a Bachelor's degree in one of the above-identified subjects must submit an official original transcript from the college or university. *A diploma, copy of the diploma, or copy of the transcript will not be accepted.* The official original transcript will be accepted from applicants. The college or university transcript must be official/original and include the university stamp or seal.

i. Bachelor's Degrees In Other Subjects: An applicant with a Bachelor's degree in a subject not listed above, such as Biological Sciences, Pharmacy, Mechanical Technology, or a Computer Science degree from an institution that was not accredited by the CSAC of the CSAB or by the CAC of ABET on or before the date the degree was awarded must establish to the satisfaction of the OED Director that he or she possesses the necessary scientific and technical training under either Category B or Category C below.

ii. Graduate Degrees: An applicant who has a Master's or higher level degree in one of the subject areas listed above, but does not have a Bachelor's degree in such subject, must establish to the satisfaction of the OED Director that he or she possesses the necessary scientific and technical training. Possession of the necessary scientific and technical training may be satisfactorily established in the manner set forth under either Category B or Category C below.

B. CATEGORY B: *Bachelor's Degree in Another Subject.* An applicant with a Bachelor's degree in a subject other than one of those listed in Category A, must establish to the satisfaction of the OED Director that he or she possesses scientific and technical training equivalent to that received at an accredited U.S. college or university for a Bachelor's degree in one of the subjects listed in Category A. To establish such equivalence to the satisfaction of the OED Director, an applicant can satisfy one of the following four options, other training, or other education listed below. The applicant must submit the necessary documentation and objective evidence showing satisfaction of one of the options or other means of qualifying.

i. Option 1: 24 semester hours in physics. Only physics courses for physics majors will be accepted.

ii. Option 2: 32 semester hours in a combination consisting of the following:
8 semester hours of chemistry or 8 semester hours of physics, and
24 semester hours in biology, botany, microbiology, or molecular biology.
The 8 semester hours in chemistry or 8 semester hours of physics must be obtained in two sequential courses, each course including a lab. Only courses for science or engineering majors will be accepted.

iii. Option 3: 30 semester hours in chemistry. Only chemistry courses for chemistry majors will be accepted.

iv. Option 4: 40 semester hours in a combination consisting of the following:
8 semester hours of chemistry or 8 semester hours of physics, and
32 semester hours of chemistry, physics, biology, botany, microbiology, molecular biology, or engineering. (For Computer Science, see other acceptable course work.)
The 8 semester hours of chemistry or 8 semester hours of physics must be obtained in two sequential courses, each course including a lab. Only courses for science or engineering majors will be accepted. For Computer Science, see other "**Other Acceptable Course Work.**"

All acceptable coursework for Options 2 and 4 must be for science or engineering majors.

v. Transcripts: Official original transcripts are required to establish both the award of a Bachelor's degree and completion of each course relied on to establish scientific and technical training in Category B.

Please note that a diploma, copy of a diploma, or copy of a transcript is not acceptable evidence of a degree. Each applicant must provide an original official transcript from a college or university as evidence of the degree received. An official transcript issued to an applicant will be accepted provided the transcript includes an original university or college stamp or seal. A letter from the registrar specifying a degree or degrees is not acceptable.

Transcripts must show the same name as the application. An applicant who has changed his or her name must submit legal documentation of the name change, such as a marriage certificate or court order.

The transcript must be official and original. However, the applicant may send the transcript to OED as the transcript does not need to be sent to OED directly from the university or college.

An applicant instructing a college or university to send transcripts directly to the OED at the USPTO should provide this information in a letter accompanying the application. Applicants are urged to furnish the university or college with a copy of a certificate of mailing (enclosed in this bulletin) and instruct the institution to include a completed and signed certificate of mailing in the envelope with the transcript.

vi. Course Descriptions: For each course relied upon in Options 1, 2, 3, or 4 above, applicants must furnish an official course description which is concurrent with the year in which the course was taken to accompany the official original transcript. The course descriptions must include:

Copies of the catalog cover page showing the year, the page(s) describing the requirements for the major and

Complete pages describing the courses to be considered.

vii. Grades: *Only courses with a grade of C- or better will be accepted.* To speed the review process, please highlight the courses to be considered on the transcripts and course descriptions submitted.

viii. Quarter hour conversion: A semester hour is a unit of academic credit fulfilled by completing one hour of class instruction each week for one semester, a semester being a division constituting half of the regular academic year, lasting typically from 15 to 18 weeks. For credits earned at a university or college in which the term is less than the 15 to 18 week semester, the credits earned at that university or college will need to be adjusted to determine whether the applicant established to the satisfaction of the OED Director that he or she possesses the necessary scientific and technical training under Category B. To convert trimester credit hours or quarter hours into semester hours, multiply the quarter hours or trimester credit hours by 2/3.

ix. Translations: Certified English translations of foreign language documents, such as transcripts, course descriptions and any other supporting documentation must be furnished for the foreign language documents to be considered.

x. Other Acceptable Course Work: Under Option 4, up to four semester hours will be accepted for courses in design engineering or drafting. Also, under Option 4, computer science courses that stress theoretical foundations, analysis, and design, and include substantial laboratory work, including software development will be accepted. Such courses include the representation and transformation of information structures, the theoretical models for such representations and transformations, basic coverage of algorithms, data structures, software design with a laboratory, programming languages with a laboratory, and computer organization and architecture. Other acceptable courses in computer science include artificial intelligence and robotics, networking, linear circuits, logic circuits, operating systems, and software methodology and engineering. However, the courses may not be substituted for the eight semester hours of chemistry or physics required under Option 4.

xi. Typical Non-Acceptable Course Work: The following typify courses that are not accepted as demonstrating the necessary scientific and technical training: anthropology; astronomy; audited courses; behavioral science courses such as psychology and sociology; continuing legal education courses; courses in public health; courses relating technology to politics or policy; courses offered by corporations to corporate employees; courses in management, business administration and operations research; courses on how to use computer software; courses directed to data management and management information systems; courses to develop manual, processing or fabrication skills (e.g. machine operation, wiring, soldering, etc.); courses taken on a pass/fail basis; correspondence courses; ecology; economics of technology; courses in the history of science, engineering and technology; field identification of plants and/or animals; home or personal independent study courses; high school level courses; mathematics courses; one day conferences; patent law courses; paleontology; political science courses; repair and maintenance courses; radio operator license courses; science courses for non-science majors; vocational training courses; and work study programs. Also not accepted are college research or seminar courses where the course content and requirements are not set forth in the course descriptions; and courses that do not provide scientific and technical training. Further, not accepted are courses that repeat, or which are substantially the same as, or are lesser-included courses for which credit has already been given.

xii. Other Training: Other factors will also be considered on a case-by-case basis with respect to scientific and technical training. The OED will consider expertise in scientific and technical training which is equivalent to that of a Bachelor's degree in a subject listed in Category A. An applicant without a degree listed in Category A has the burden of establishing possession of sufficient training and expertise in science or engineering to be equivalent to that of a Bachelor's degree in a subject listed in Category A. Objective evidence demonstrating that training is equivalent to training received in courses accepted under Category A may establish such equivalency.

xiii. Other Education: Other education (e.g., foreign education, academic credit for work experience, military education, life experience, etc.) is acceptable to the extent objective evidence demonstrates the education is equivalent to that received at an accredited U. S college or university in one of the subjects listed in Category A. For example, such education may be met by one of the following showings:

- a. The specific courses have been accepted for college-level credit in a Category A subject by an accredited U.S. college or university because they would be creditable if the student were to further his or her education at that institution.
- b. The academic credit earned in a Category A subject earned through a special credit program, such as the College Level Examination Program (CLEP), and an accredited college or university has awarded credit.
- c. If credit has been given for life experience, the college or university must identify the course work area(s) or courses in a Category A subject for which the credit is given. Life experience credit for courses that are not identified in its course catalog as part of a college or university's curriculum is not acceptable, unless the college or university is giving credit for course work in a Category A subject that is a prerequisite for more advanced courses in Category A included in its curriculum.
- d. Credit in a Category A subject for home study course work has been granted by a postsecondary institution accredited by the National Home Study Council.
- e. An accredited U.S. State college or university reports the degree from another institution as one whose transcript is given full value, and full value is given in a Category A subject applicable to the curricula at the U.S. State college or university.

- f. The education completed outside the U.S. has been submitted to a private organization that specializes in interpretation of foreign educational credentials and such education has been deemed at least equivalent to that gained in conventional U.S. education programs. The Council on Postsecondary Accreditation may be of some help in providing information on these organizations.
- g. Credits from the United States Department of Agriculture (USDA) Graduate School, or other institutions determined to be equivalent for this purpose, are accepted by an accredited institution on the same basis as study in accredited colleges and universities.

xiv. Military Service: Although the OED will not evaluate and award credit for military service, credit may be granted for technical courses taken pursuant to military training. The applicant has the burden of showing the semester hours credit each course relied upon would be accorded toward a degree at an accredited U.S. University or college. Applicants should consult the *Guide to Evaluation of Educational Experience in the Armed Services*, which is available through the American Counsel on Education, Military Evaluation Program, 1 Dupont Circle, Washington, DC 20036.

C. CATEGORY C: Practical Engineering or Scientific Experience. An applicant relying on practical engineering or scientific experience or who does not qualify under Category A or B above may establish the required technical training by demonstrating that he or she has taken and passed the Fundamentals of Engineering (FE) test. The FE test is a test of engineering fundamentals. The FE test is developed and administered by a State Board of Engineering Examiners in each State or comparable jurisdiction. Neither the USPTO nor any other U.S. Government agency administers the test. Applicants desiring to take the FE test should direct inquiries to the Secretaries of the appropriate State Boards. Official results of the FE test must be submitted to establish qualification under this category. Applicants attempting to qualify under Category C must submit an official original transcript showing the award of a Bachelors degree.

D. ALL BUSINESS TRANSACTED IN WRITING: All business with the USPTO should be transacted in writing. Personal attendance is unnecessary. The action of OED will be based exclusively on the written record in the Office. 37 CFR § 1.2.

E. ELIGIBILITY OF ALIENS: Applicants who are not United States citizens and do not reside in the U.S. are not eligible for registration except as permitted by 37 CFR § 11.6(c). Presently, the Canadian Patent Office is the only Patent Office recognized as allowing substantially reciprocal privileges to those admitted to practice before the USPTO. The registration examination is not administered to aliens who do not reside in the United States.

Aliens residing in the United States may apply to take the registration examination. To be admitted to the examination, an applicant must establish that recognition is consistent with the capacity of employment authorized by the United States Citizenship and Immigration Services (USCIS) (formerly U.S. Immigration and Naturalization Service ("INS")). The evidence must include a copy of both sides of any work or training authorization and copies of all documents submitted to and received from the USCIS regarding admission to the United States and a copy of any documentation submitted to the U.S. Department of Labor. Qualifying non-immigrant aliens within the scope of 8 CFR § 274a.12(b) or (c) are not registered upon passing the examination. Such applicants will be given limited recognition under 37 CFR § 11.9(b) if recognition is consistent with the capacity of employment or training authorized by the USCIS. Documentation establishing an applicant's qualification to receive limited recognition must be submitted with the applicant's application.

Qualifying documentation would show that the USCIS has authorized the applicant to be employed or trained in the capacity of representing patent applicants before the USPTO by preparing and prosecuting their patent applications. Any USCIS approval pending at that time will result in the applicant's application being denied admission to the examination.

F. INELIGIBLE APPLICANTS:

i. Convictions: Conviction” or “convicted” is defined by 37 CFR 11.1 as meaning any confession to a crime; a verdict or judgment finding a person guilty of a crime; any entered plea, including *nolo contendere* or Alford plea, to a crime; or receipt of deferred adjudication (whether judgment or sentence has been entered or not) for an accused or pled crime. Applicants convicted of a felony, or a crime involving moral turpitude or breach of trust, are not eligible for registration or to apply for registration during the time of any sentence (including confinement or commitment to imprisonment), deferred adjudication, and period of probation or parole as a result of the conviction and for a period of two years after the date of successful completion of said sentence, deferred adjudication, and probation or parole. See 37 CFR § 11.7(h)(1). Such applicants must file with an Application for Registration the fees required by 37 CFR §§ 1.21(a)(1)(ii) and 1.21(a)(10) of this subchapter. The OED Director will determine whether the person has produced satisfactory proof of reform and rehabilitation, including at a minimum a sufficient period of exemplary conduct. An applicant subject to the provisions of 37 CFR § 11.7(h)(1) must submit the fee specified in 37 CFR § 1.21(a)(10) for each determination by the OED Director under 37 CFR § 11.7.

ii. Disciplined Professionals: Applicants who have been disbarred from practice of law or other profession, or who have resigned a professional license in lieu of a disciplinary proceeding, are ineligible to apply for registration for a period of five years from the date of disbarment or resignation. Applicants suspended on ethical grounds from the practice of law or other profession are ineligible to apply for registration until expiration of the period of suspension. An applicant who, in addition to being disbarred, suspended or resigned, also has been convicted of a felony or a crime involving moral turpitude or breach of trust is ineligible to apply for registration until the conditions of both 37 CFR §§ 11.7(h)(1) and 11.7(h)(4) have been fully satisfied. See 37 CFR § 11.7(h)(4). An applicant subject to the provisions of 37 CFR § 11.7(h)(4) must submit the fee specified in 37 CFR § 1.21(a)(10) for each determination by the OED Director under 37 CFR § 11.7.

iii. Previously Denied For Lack Good of Moral Character and Reputation: Applicants refused registration for lack of present good moral character and reputation in a USPTO Director’s decision; or in the absence of a USPTO Director’s decision, in a recommendation of the OED Director and Committee on Enrollment, are ineligible to reapply for registration for two years after the date of the decision, unless a shorter period is otherwise ordered by the USPTO Director. An applicant under investigation for moral character and reputation who elects to withdraw his or her application is ineligible to reapply for registration for two years after the date of withdrawal. See 37 CFR § 11.7(k). Such an applicant must pay the fees required by 37 CFR §§ 1.21(a)(1)(ii) and 1.21(a)(10) upon filing an application, and has the burden of showing his or her fitness to practice. The applicant also must pass the registration examination even if applicant previously passed the examination. An applicant subject to the provisions of 37 CFR § 11.7(k) must submit the fee specified in 37 CFR § 1.21(a)(10) for each determination by the OED Director under 37 CFR § 11.7. For purposes of 37 CFR § 1.21(a)(10), an applicant who withdraws his or her application during an investigation for moral character and reputation will be considered to have obtained a determination by the OED Director under 37 CFR § 11.7.