

SENATE No. 269

By Mr. Buell, a petition (accompanied by bill, Senate, No. 269) of Robert C. Buell, Forrester A. Clark, Jr., and Delane E. Anderson, Jr., for legislation relative to military recruiters access to all public high schools and institutions of higher education and related student information. Education, Arts and Humanities.

The Commonwealth of Massachusetts

In the Year One Thousand Nine Hundred and Eighty-Nine.

AN ACT RELATIVE TO MILITARY RECRUITERS ACCESS TO ALL PUBLIC HIGH SCHOOLS AND INSTITUTIONS OF HIGHER EDUCATION AND RELATED STUDENT INFORMATION.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

1 SECTION 1. Chapter 15A of the General Laws is hereby
2 amended by inserting after section 21, added by section 9 of
3 chapter 727 of the acts of 1987, the following section: —

4 Section 22. Notwithstanding any other provision of law to the
5 contrary, all public institutions of higher education shall offer the
6 same student information and on-campus recruiting opportunities
7 to representatives of state or United States armed services as they
8 offer to nonmilitary recruiters.

1 SECTION 2. Chapter 71 of the General Laws is hereby
2 amended by inserting after section 87, as appearing in the 1986
3 Official Edition, the following section: —

4 Section 88. Notwithstanding any other provisions of law to the
5 contrary, all public high schools shall offer the same student
6 information and on-campus recruiting opportunities to
7 representatives of state or United States armed services as they
8 offer to nonmilitary recruiters.

The first part of the course is devoted to the study of the foundations of quantum mechanics. This includes a discussion of the wave function, the uncertainty principle, and the Schrödinger equation. The second part of the course is devoted to the study of the applications of quantum mechanics to atomic and molecular physics. This includes a discussion of the hydrogen atom, the harmonic oscillator, and the perturbation theory of degenerate states.

The Foundations of Quantum Mechanics

1. The wave function and the uncertainty principle

The wave function is a mathematical function that describes the state of a quantum system. It is a complex-valued function of position and time. The uncertainty principle states that the position and momentum of a particle cannot both be known to arbitrary precision. This is a fundamental property of quantum mechanics.

The Schrödinger equation is a partial differential equation that governs the time evolution of the wave function. It is named after the physicist Erwin Schrödinger. The equation is a second-order partial differential equation in space and first-order in time.

The hydrogen atom is a simple system that can be solved exactly. It consists of a single electron orbiting a single proton. The energy levels of the hydrogen atom are given by the formula $E_n = -13.6 \text{ eV} / n^2$, where n is the principal quantum number.

The harmonic oscillator is a simple system that can be solved exactly. It consists of a mass on a spring. The energy levels of the harmonic oscillator are given by the formula $E_n = \hbar \omega (n + 1/2)$, where n is the quantum number and ω is the angular frequency.

Perturbation theory is a method for approximating the energy levels and wave functions of a system that is slightly different from a system that can be solved exactly. It is a powerful tool for studying the effects of small perturbations on a quantum system.

SECTION 3. Chapter 11 of the Lecture Notes

The first part of this section is devoted to the study of the properties of the wave function. This includes a discussion of the normalization of the wave function, the probability density, and the expectation values of physical quantities. The second part of this section is devoted to the study of the properties of the energy levels of a quantum system. This includes a discussion of the degeneracy of the energy levels, the selection rules for transitions between energy levels, and the effects of external fields on the energy levels.