

The Double Major Program in Physics and Electrical Engineering

The aim of the double major program is to give electrical engineering students an opportunity to earn a BS degree in Physics along with their degree in engineering.

Electrical engineering students in good academic standing (GPA > 3.00) who show an interest in physics are admitted to the double major program at the beginning of their sophomore year. After basic courses at the Halliday-Resnick level, these students continue with 8 other courses in physics. To fulfill these course requirements, they have to take 15 extra credit-hour worth courses as overloads.

Of these 8 courses, 5 are compulsory and 3, elective. The compulsory courses are as follows :

- Phys. 221 - Thermal properties of matter.
(Level: Benedek and Villars, Statistical Physics, Chp. 4, Reif, Statistical physics, Berkeley physics series vol.5)
- Phys 302 - Mechanics II
(Mostly oscillatory motion, coupled oscillations, eigenmodes, and introduction to Lagrangian mechanics.)
- Phys. 311 - Quantum Physics I (Level : Krane, Gasiorowicz; phenomenology and orders of magnitude)
- Phys. 401 - Electromagnetism I (Level: Reitsz and Milford, Griffiths)
- Phys. 402 - Electromagnetism II

Among the elective courses popular with the double major students are : Quantum Physics II, Introduction to Mathematical Methods of Physics I & II, Experiments in Modern Physics I, Solid State Physics, Physical Electronics I & II, and Computational Physics. And double major students may choose one or two courses from a variety of computer courses that are offered by the Physics Department for the computational-physics option.

Having taken a total of 11 physics courses as well as overlapping mathematics, chemistry and other courses found both in the physics and the electrical engineering programs, a double major student qualifies for two BS degrees at the end of his/her four years.

Graduates of the double major program have been accepted by: Berkeley, Brown, Columbia, Johns Hopkins, MIT, Rochester , Stony Brook, San Diego and Yale into their Ph.D programs in physics, applied physics and electrical engineering.

