ENFP671 Material Flammability

Credits: Three (3)

Contact hours: Two lectures per week, 1 hour and 15 minutes each

Table 5-1 category: N/A

Instructor: Stoliarov

Textbook: None
Other supplemental materials: SFPE FPE Handbook

Catalog description:
This course introduces students to the science and technology of polymeric materials. Standard methods for assessment of fire hazards associated with these materials are reviewed. Fundamental mechanisms defining polymer combustion in various scenarios are discussed. Modeling of the thermal decomposition and pyrolysis of combustible solids is emphasized.

Prerequisites and Corequisites:
Prerequisite: ENFP312. ENFP415 or ENFP651 are recommended.

Table 5-1 Course Type: Required

Specific outcomes of instruction:
Students successfully completed this course will be able to perform a quantitative determination of the impact of selection of a given material on a scenario-specific rate of fire development and use this knowledge to carry out analysis of fire accidents or to make optimum fire protection design decisions.

Student outcomes assessed: N/A

Brief list of topics covered: introduction to polymers, thermo-mechanical behavior, introduction to composite materials, standard flammability tests, chemistry of polymer decomposition, physics of pyrolysis, chemistry of gas-phase combustion, understanding flame-solid interactions.