introduction

Having derived the four differential equations of stellar structure, we turn now to the three associated relations for P, κ and ε we introduced earlier.

$P = P(\rho, T, \text{composition})$	**pressure (the equation of state)**
$\kappa = \kappa(\rho, T, \text{composition})$	**opacity**
$\varepsilon = \varepsilon(\rho, T, \text{composition})$	**energy release per unit mass per unit time**

In this part of the course we will see how P, κ and ε can be calculated if the density, ρ, temperature, T, and chemical composition of the stellar material are known. In order to do this, we will have to look at the physics of stellar interiors, including nuclear physics, atomic physics and thermodynamics. This is a complex subject and hence only the basic physical processes which determine P, κ and ε will be described here.