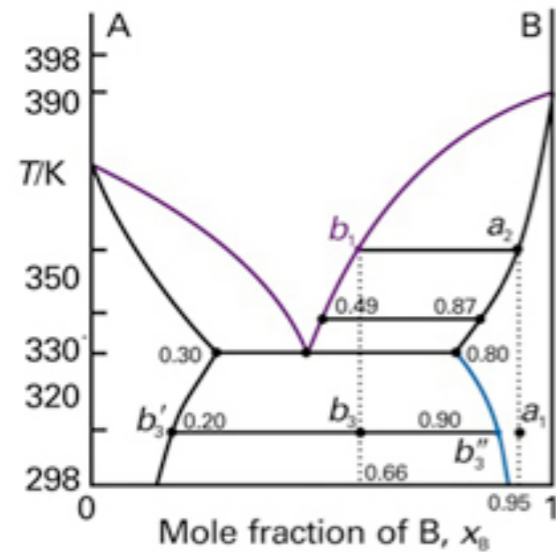


Monday, November 17



Last Time:

- Temperature effects
- Reaction mechanisms
- Competing or parallel reactions

Today:

- Sequential reactions
- Reversible reactions
- Steady state approximation

Readings:

- Levine: Chapter 16

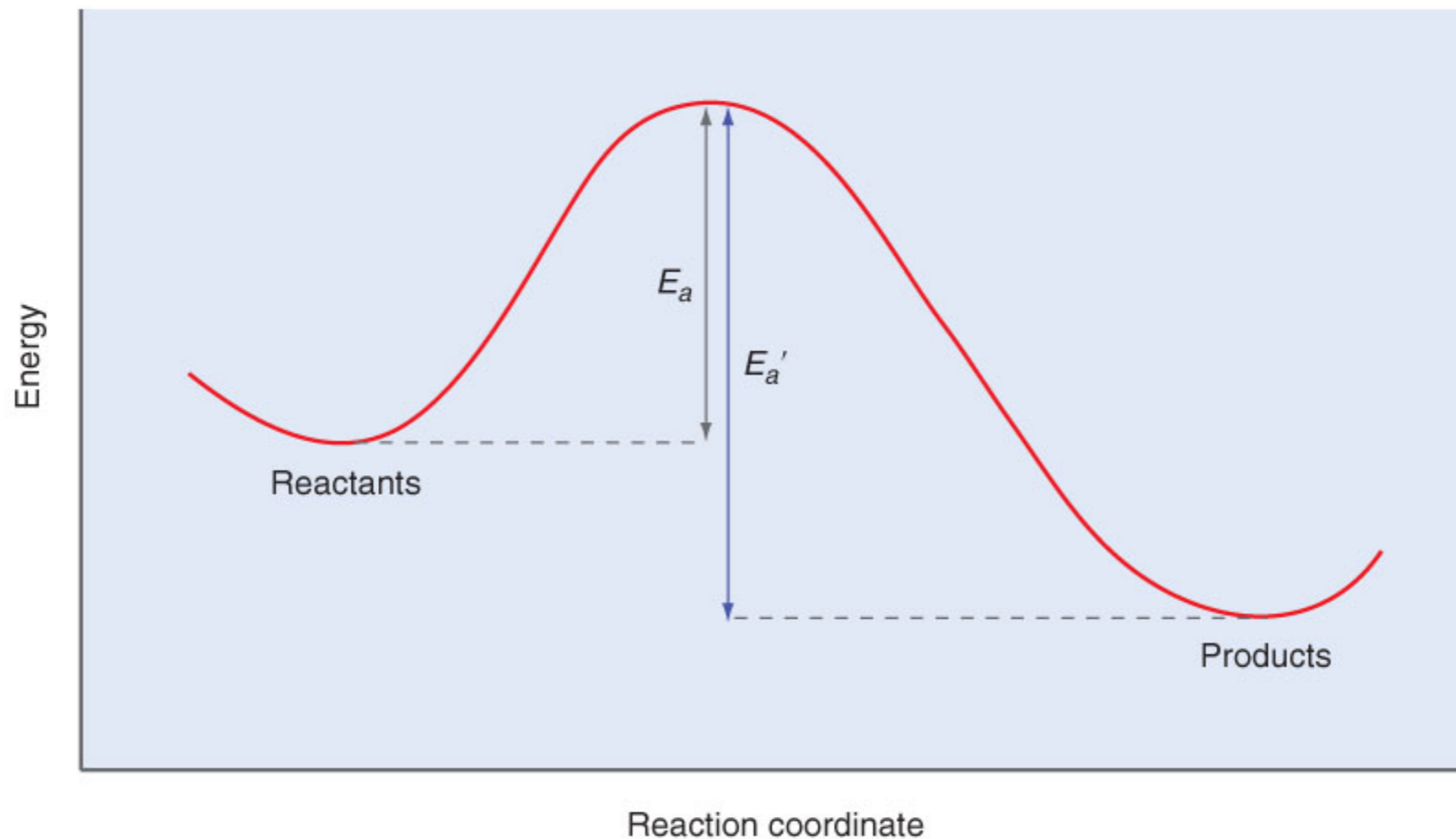
Handouts:

Reminders: Homework 10 for
Wednesday
Office hours today 3–4:30

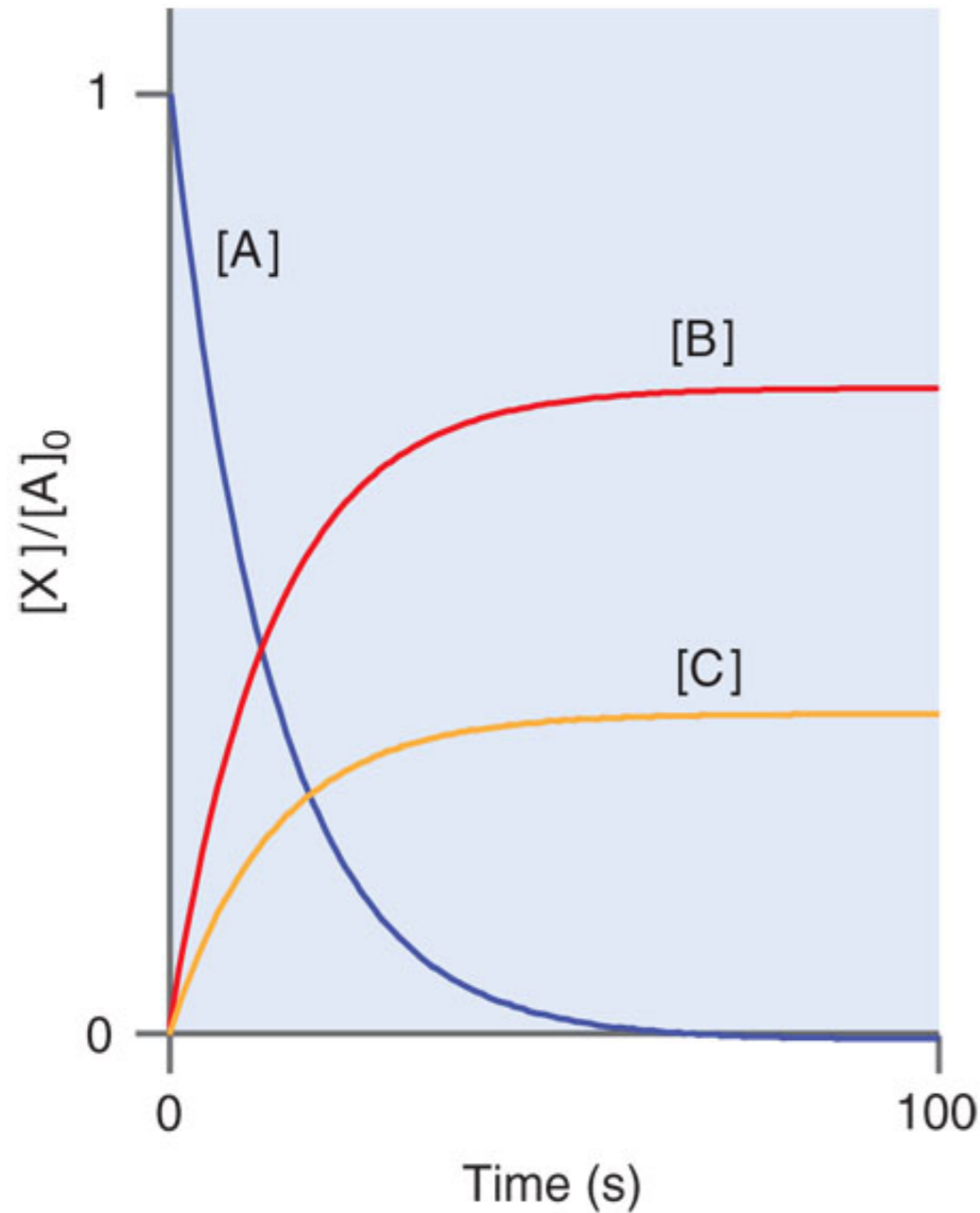
Temperature dependence of rate constant

Activated process
(Arrhenius)

$$k = Ae^{\frac{-E_a}{k_b T}}$$



Competing reactions



$$[A](t) = [A]_0 e^{-(k_1+k_2)t}$$

$$\frac{d[B]}{dt} = k_1[A] = k_1[A]_0 e^{-(k_1+k_2)t}$$

$$[B](t) = \frac{k_1[A]_0}{k_1 + k_2} \left[1 - e^{-(k_1+k_2)t} \right]$$

$$[C](t) = \frac{k_2[A]_0}{k_1 + k_2} \left[1 - e^{-(k_1+k_2)t} \right]$$