Weeks 13, 14

Reread §4-4 or your notes on this material. Read §4-5, §5-10 through Example 3.

Assignment 11, due Friday, December 5

§4-4 #5,6,13,15,18

Hint for #13: First prove that if there is a parametrization in which the coordinate curves are geodesics, $K \equiv 0$. Now that you know that it would be extremely useful to have such a parametrization, use the hypotheses to show that there is one.

If we are well into §4-5 in time, some of §4-5 #1,2,3,4

For #2,3 you will find it useful to remember that $K = \det dN$ and use the change of variables formula for double integrals, which says that if $S, S'$ are surfaces and $\phi : S \to S' = \phi(S)$ is a diffeomorphism then

$$\int_{S'} f(u) \, d\sigma' = \int_S f(\phi(x))(\det d\phi)(x) \, d\sigma.$$