



14:635:360
“MSE of Ceramics”
Spring 2016

Registration number: 19637

Meeting Times: Monday and Thursday, 12:00 – 1:20

Instructor: Dunbar P. Birnie, III, Professor in Materials Science and Engineering
e-mail: dunbar.birnie@rutgers.edu
Campus phone: 848-445-5605 Office location: CCR 129

Ceramic materials have unique properties that make them ideal for myriad applications from piezoelectric transducers, high temperature jet engine components, military armor, and biomedical implants, to name just a few. The unique properties of ceramics are also directly related to why they are difficult to make! This class will delve into the reasons why ceramic materials behave the way that they do – and the steps we take to make them into the useful products that we need.

REQUIRED

TEXTBOOK: Physical Ceramics (1997), Y.-M. Chiang, D.P. Birnie III, W. D. Kingery, Wiley, New York,

GOAL: To provide students with an understanding of the atomic and microstructural level fundamental processes that are critical when designing ceramic devices and processes to form those devices.

Grading:

In class activities (microstructure related):	10%
Homework:	30%
Mid-Term Test:	30%
Final Exam:	30%

Office Hours: Best by appointment - arranged by email (dunbar.birnie@rutgers.edu).

Class Website: Lecture Material, HW, handouts and other info via a class SAKAI site.