

# Lectures on Pure and Applied Math



## Announcing

A Seminar Presentation  
on February 18, 2016  
at 1:30 pm in Lee Hall 301  
at The University of New Haven

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### Title: Simultaneous Triangularization of Collections of Operators and Matrices

#### Abstract:

Let  $\mathcal{V}$  be a vector space and  $T$  a linear operator on  $\mathcal{V}$ . A subspace  $\mathcal{M}$  of  $\mathcal{V}$  is said to be invariant under  $T$  if  $T\mathcal{M} \subseteq \mathcal{M}$ . An operator  $T$  (or a collection  $\mathcal{C}$  of operators) is said to be (simultaneously) triangularizable if there is a maximal chain of invariant subspaces for  $T$  (for all members of  $\mathcal{C}$ .) In finite-dimensional vector spaces over an algebraically closed field (for example over the field of Complex numbers), it is well known that every linear operator is triangularizable. Also, for such vector spaces, it is well known that any *commutative* collection  $\mathcal{C}$  of operators or matrices is simultaneously triangularizable. In this talk I'll survey and discuss other results, some of them obtained recently, about triangularization of a collection of operators or matrices. The infinite-dimensional cases (for operators on Hilbert and Banach spaces) are also discussed.

#### Further Information

For further information, please contact Angie Domschine at the Department of Mathematics, Office: Maxcy 204, 203-932-7250, [ADomschine@newhaven.edu](mailto:ADomschine@newhaven.edu).