## L-TAM: Table of Contents Steve Paris (FSU)

## Module 2 - Benefits

Section 1: Basics

Part 1: Introduction

Part 2: Review of Common Statuses

Section 2: Discrete Annuities (Due)

Part 1: General Overview (Including Actuarial Discount Factors)

Part 2: Level Single-life

Example #1: Whole Life

Example #2: n-year Deferred

Example #3: n-year Temporary

Example #4: n-year Certain-and-Life

Part 3: Level Multiple-life

Example #1:  $\sigma = xy$  and  $\sigma = \overline{xy}$ 

Example #2: Reversionary Annuities

Part 4: Level Single-life Multiple States (Markov Chains)

Part 5: Non-level Benefits

Case 1: No Patterns or Geometric Annuities

Case 2: Arithmetic Annuities

Part 6: Upper m Annuities

Part 7: Relating  $\ddot{a}_x$  and  $\ddot{a}_x^{(m)}$ 

Case 1: UDD

Case 2: Woolhouse

## Section 3: Continuous Annuities

Part 1: General Overview

Part 2: Level Single-life

Example #1: Whole Life

Example #2: n-year Deferred

Example #3: n-year Temporary

Example #4: n-year Certain-and-Life

Part 3: Level Multiple-life

Example #1:  $\sigma = xy$  and  $\sigma = \overline{xy}$ 

Example #2: Reversionary Annuities

Part 4: Level Single-life Multiple States

Part 5: Non-level Benefits

Part 6: Relating  $\ddot{a}_x$ ,  $\ddot{a}_x^{(m)}$ , and  $\bar{a}_x$ 

## Section 4: Discrete Insurance

Part 1: General Overview

Part 2: Level Single-life

Example #1: Whole Life

Example #2: n-year Pure Endowment (Actuarial Discounting)

Example #3: n-year Deferred

Example #4: n-year Term

Example #5: n-year Endowment Insurance

Part 3: Level Multiple-life

Part 4: Level Single-life Multiple Decrements

Part 5: Non-level Benefits

Case 1: No Patterns or Geometric Insurance

Case 2: Arithmetic Insurance

Part 6: Upper m Insurance

Part 7: Relating *A* and  $A^{(m)}$  for  $\sigma = x$ ,  $\sigma = \stackrel{1}{x}$ :  $\overline{n}$ , or  $\sigma = {}_{n}$ 

Case 1: UDD Case 2: CAA

Section 5: Continuous Insurance

Part 1: General Overview

Part 2: Level Single-life

Example #1: Whole Life

Example #2: n-year Deferred

Example #3: n-year Term

Example #4: n-year Endowment Insurance

Part 3: Level Multiple-life

Part 4: Level Single-life Multiple Decrements

Part 5: Non-level Benefits

Part 6: Relating A,  $A^{(m)}$ , and  $\bar{A}$  for  $\sigma = x$ ,  $\sigma = x$ :  $\bar{n}$ , or  $\sigma = x$ . (UDD and CAA)

Section 6: Relating Insurance and Annuity Present Value Random Variables

Part 1: For Common Statuses:  $\sigma = x$  and  $\sigma = x$ :  $\bar{n}$ 

Part 2: Variance of Annuity Due PVRV's for Common Statuses Above

Part 3: Derivation of UDD and CAA Formulas

Section 7: Probabilities of Events Involving Present Value Random Variables

Part 1: General Overview

Part 2: Examples

Example #1: Discrete Whole Life Insurance

Example #2: Continuous Whole Life Insurance

Example #3: Discrete n-year Deferred Insurance

Example #4: Continuous n-year Deferred Insurance

Section 8: Recursion and Actuarial Accumulated Values

Part 1: Recursion

Part 2: Actuarial Accumulated Values