

# Math of Finance

## Course Outcome Summary

### Course Information

<b>Organization</b>	WTCS - Wisconsin Technical College System
<b>Course Number</b>	10-804-144
<b>Instructional Level</b>	Associate Degree
<b>Instructional Area</b>	General Studies
<b>Total Credits</b>	3

### Description

Students will create financial timelines to solve financial problems. They will solve problems involving simple and compound interest. Students will use discounting to solve problems. They will calculate the components of ordinary and complex annuities. Students will solve problems using financial formulas, business calculators, and or tables. Finally, students will use descriptive statistics and spreadsheet applications to interpret financial data.

### Textbooks

Cissell, Cissell, and Flaspohler. *Mathematics of Finance*. Houghton Mifflin. **Edition: 8.**

### Prerequisites

High School Algebra or equivalent

### Competencies

- 1. Solve simple interest problems**  
**You will demonstrate your competence:**
  - 1.a. Using simple interest formulas**Your performance will be successful when:**
  - 1.a. you show your work
  - 1.b. you use the correct formula or method
  - 1.c. Solutions include correct timeline
  - 1.d. Solutions accurate to +/- 1%
- 2. Solve discounting problems**  
**You will demonstrate your competence:**
  - 2.a. Using simple discount formulas**Your performance will be successful when:**
  - 2.a. you show your work
  - 2.b. you use the correct formula or method
  - 2.c. Solutions include correct timeline
  - 2.d. Solutions accurate to +/- 1%
- 3. Solve compound interest problems**  
**You will demonstrate your competence:**
  - 3.a. Using business calculator
  - 3.b. Using financial formulas

3.c. Using tables in the text

**Your performance will be successful when:**

3.a. you show your work

3.b. you use the correct formula or method

3.c. Solutions include correct timeline

3.d. Solutions accurate to +/- 1%

**4. Solve ordinary annuity problems**

**You will demonstrate your competence:**

4.a. Using business calculator

4.b. Using financial formulas

4.c. Using tables provided in the book

**Your performance will be successful when:**

4.a. you show your work

4.b. you use the correct formula or method

4.c. Solutions include correct timeline

4.d. Solutions accurate to +/- 1%

**5. Solve annuity due problems**

**You will demonstrate your competence:**

5.a. Using financial formulas

5.b. Using tables provided in your book

5.c. Using business calculator

**Your performance will be successful when:**

5.a. you show your work

5.b. you use the correct formula or method

5.c. solutions include correct timeline

5.d. solutions accurate to +/- 1%

**6. Solve deferred annuity problems**

**You will demonstrate your competence:**

6.a. Using a business calculator

6.b. Using financial formulas

6.c. Using tables provided in your book

**Your performance will be successful when:**

6.a. you show your work

6.b. you use the correct formula or method

6.c. Solutions include the correct time line

6.d. Solutions accurate to +/- 1%

**7. Solve forborne and perpetuity annuity problems**

**You will demonstrate your competence:**

7.a. Using a business calculator

7.b. Using financial formulas

7.c. Using tables provided in your book

**Your performance will be successful when:**

7.a. you show your work

7.b. you use the correct formula or method

- 7.c. Solutions include the correct time line
- 7.d. Solutions accurate to +/- 1%

**8. Solve complex annuity problems**

**You will demonstrate your competence:**

- 8.a. Using business calculator
- 8.b. Using financial formulas
- 8.c. Using tables provided in the book

**Your performance will be successful when:**

- 8.a. you show your work
- 8.b. you use the correct formula or method
- 8.c. Solutions include correct timeline
- 8.d. Solutions accurate to +/- 1%

**9. Solve amortization and sinking fund problems**

**You will demonstrate your competence:**

- 9.a. Using financial formulas
- 9.b. Using Microsoft Excel
- 9.c. Using Business calculator

**Your performance will be successful when:**

- 9.a. you show your work
- 9.b. you use the correct formula or method
- 9.c. Solutions accurate to +/- 1%
- 9.d. Tables are created manually or via spreadsheet
- 9.e. Spreadsheet applications return accurate and precise solutions
- 9.f. Spreadsheet applications are user friendly

**10. Perform statistical calculations**

**You will demonstrate your competence:**

- 10.a. Using Microsoft Excel
- 10.b. Using Business or Scientific calculator

**Your performance will be successful when:**

- 10.a. you show your work
- 10.b. you use the correct formula or method
- 10.c. Solutions accurate to +/- 1%
- 10.d. Spreadsheet applications return accurate and precise solutions
- 10.e. Spreadsheet applications are user friendly