FINA3361
Introduction to Business Finance II
Fall, 2013
All Sections

Instructor: Prof. Bill Fletcher   **Office:** SB127
Email: bill.fletcher@smu.ca   **Office Hours:** 10:00 am – 11:00 am TR
Phone: 491-8677   **Web page:**   none

Day, Time, and Location of Classes:
Section A 11:30 am to 12:45 pm TR LA175
Section B   1:00 pm to 2:45 pm TR LA173
Instructor: Prof. Rahman Khokhar   **Office:** SB125
Email: Rahman.Khokhar@smu.ca   **Office Hours:** 10:30 am – 1:30pm TR
Phone: 491-6371
Section C   5:30 pm to 8:29 pm R LA174
Section D   5:30 pm to 8:29 pm T LA186
Credit Hours: 3.0
Course Prerequisite(s): FINA2360 and MGSC2207 Must have completed and passed.

Bachelor of Commerce Program Goals
Communication: You will be able to employ the communication skills required to effectively facilitate interpersonal and business relationships
- Students will demonstrate professionally written communications that are well-organized, clear, and concise
- Students will prepare and deliver well-organized professional oral presentations

Critical Thinking: You will possess the ability to critically assess situations and employ appropriate problem solving skills
- Students will formulate and justify positions on issues or situations using appropriate evidence

Ethics and Corporate Social Responsibility: You will understand relevant ethical issues and recognize the impact that organizations have on the environment, consumers, employees, communities, stakeholders and members of the public.

Information Literacy: You will be able to locate and use information and information technology effectively in a range of contexts.

- Students will determine and retrieve required information.
- Students will critically evaluate and use the information.
- Students will recognize and acknowledge copyright laws and intellectual property restrictions.

Knowledge and Competency: You will have knowledge of and competency in the functional areas of business finance.

Course Description

Finance 3361 is the second half of an integrated two-course study of managerial finance. The course is a continuation of the theory of financial management and its applications to the business world. Finance 3361 examines how financial managers make decisions within a framework which emphasizes time value of money, the impact of taxes on investment returns, sources of capital funding, the effect of capital structure on the value of the organization and the dividend policies of the firm. The student is expected to incorporate the techniques that financial managers use to evaluate the feasibility of the creation of shareholder wealth. Finance 3361 is broken into two broad themes; analyzing and understanding the capital markets from the perspective of an *investor*, and analyzing and understanding the capital markets from the perspective of a *firm*.

Students should note that Finance 3361 is a direct continuation of Finance 2360; therefore, the material introduced in Finance 2360 will be required for Finance 3361. A lack of a comprehensive understanding of the basic tools and concepts that were taught in Finance 2360 will likely cause frustration for the student as they continue in Finance 3361. You are therefore encouraged to review the material covered in Finance 2360, especially time value of money, stock and bond valuation. Students should be familiar with EXCEL spreadsheets, basic financial statements and statistics.

Course Objectives
After completing this course, if you have **attended class regularly**, <u>read</u> **the assigned material, completed assignments on your own** and **applied the teachings presented in the course**, you will be able to

- Recognize the features and restrictions of corporate bonds in the market and be able to valuate bonds prices in the markets.

- Analyze and differentiate between the various forms of issuing securities to the market and the impact on the wealth of the investor including the investor wealth decisions from rights offerings.
- Analyze the corporate structure, recognize risk and risk adjusted required rates of return of the firm.
- Analyze the impact of operating and financial leverage on the earnings of the company and risk that is associated with the leverage.
- Apply a capital structure model for the capital design of company that will allow the firm to maximize the value of the firm and to maximize the value of the shareholders' wealth.
- Analyze the attributes of option investments and be able to prepare a report for the investment payoffs from investing in equity options.
- Differentiate the relative and relevant cash flows for the leasing option of assets rather than the purchasing of the assets.

Instructional Approach

The class will consist of lectures and discussions of the relevant topics. It is the responsibility of the student to **read** the chapter material **_before_** they arrive in the class. Lectures, assignments and quizzes will help the student prepare for exams.

Required Text

Fundamentals of Corporate Finance, Seventh Canadian Edition by Stephen A. Ross, Randolph W. Westerfield, Bradford D. Jordan and Gordon S. Roberts, McGraw-Hill Ryerson, 2011

Additional material and help available at the website www.mcgrawhillconnect.ca

Evaluation

Requirement	Weight
Quizzes	10%
Assignments	10%
Midterm	35%
Final	45%
Total	100%

To pass the course, the student must:
1. **Pass the final exam**
2. **Obtain a 50% average for a combination of the midterm exam and the final exam (equal weighting).**
3. **Obtain an overall average of 50%. (Marks are calculated to two decimals and there is no rounding.)**

There are no variations to these evaluation criteria. DO NOT ASK!

Quizzes: (10%) There will be a series of random quizzes given in class. The quiz will consist of two multiple choice questions. The questions will cover the material for that days lecture material. The lecture material for each class is outlined in the syllabus. There are no makeup quizzes.

Assignments: (10%) There will be four (4) assignments due on the following dates:

Description	Due
Assignment #1	Friday September 20, 2013 @ 12 noon
Assignment #2	Friday October 18, 2013 @ 12 noon
Assignment #3	Friday November 1, 2013 @ 12 noon
Assignment #4	Friday November 15, 2013 @ 12 noon

Assignments are to be submitted in the assignment boxes on the second floor of Loyola (above the bank machine and Tim Horton's). It is the student's responsibility to review the requirements for the submission of assignments. *If your assignment does not meet the criteria as set out in the course syllabus, your assignment will not be marked and receive a mark of 0.*

Midterm Exam: (35%) The midterm will aim at testing both your knowledge of the material covered in class and whether you can apply the concepts discussed in class to realistic problem situations. The midterm will be of understanding and not memory.

<center>

MIDTERM EXAM DATE: Friday October 25, 2013
5:30 p.m. – 8:30 p.m. Locations: TBA

</center>

You must present a valid student photo ID to be eligible to write the exam.
NO CELL PHONES IN THE EXAM ROOM.

Final Exam: (45%) The final exam will aim at testing both your knowledge of the material covered in class and whether you can apply the concepts discussed in class to realistic problem situations. The final exam will be of understanding and not memory.

<center>

FINAL EXAM DATE: December 2013
The final exam schedule is set by the Registrar's Office.
Do not book flights home early.

</center>

You must present a valid student photo ID to be eligible to write the exam.
NO CELL PHONES IN THE EXAM ROOM.

Calculators: The student does not need a special calculator for this course. Graphing calculators or calculators that have the ability to store and retrieve information will not be permitted in the examinations. No financial calculators.

Undergraduate Grading System

The numeric grades you earn in this course convert to a letter grade as follows:

A+	90-100	B+	77-79	C+	67-69	D	50-59
A	85-89	B	73-76	C	63-66	F	0-49
A-	80-84	B-	70-72	C-	60-62		

Marks contain an accuracy of 2 decimal points and there is no rounding.
Please refer to the Undergraduate Academic Calendar for related Grading System policies and procedures.

Academic Policies

Academic Integrity Policy and Student Responsibility

As a Saint Mary's University student, you are responsible for understanding and avoiding academic offences, including plagiarism, cheating, and falsification. Working with another person (or in a group) when individual work is required for a grade is considered a form of academic dishonesty.

Plagiarism is when you present someone else's words, ideas or techniques as your own. When you want to refer to someone else's work, you must reference it either by direct quotation or paraphrase (expressing the idea in your own words), which must be acknowledged using correct citation. When you are in doubt about what, when, and how to cite your information sources, consult with me, or the Writing Centre, before submitting your work. Academic dishonesty is a serious offense, so be sure you understand how to correctly acknowledge and use sources when preparing your work. Plagiarism applies to all forms of information or ideas that belong to someone else (e.g., literary works, computer programs, mathematical solutions, scientific experiments, pictures, website or data).

Furthermore, submitting the same piece of work (even if it's your own) for a grade or credit in more than one course is usually not permitted. The approval of the course instructors involved must be obtained before submitting the assignment.

If you are found in violation of this academic honesty policy, your work is subject to a grade of zero, and you will be reported to the Registrar. If the Registrar finds this is a second offence, you will be referred to the university's Academic Honesty Committee and subject to disciplinary action.

Please read the entire "Academic Integrity" section (Academic Regulation 19) of Saint Mary's Academic Calendar for a complete description of each offence, noting especially the examples of plagiarism and penalties.

Late Assignments, Missed Tests, Mid-term Exams, or other Due Dates

Late assignments will not be accepted. A mark of 0 is assigned to the late assignment. There are no make-up or supplemental quizzes or exams, no additional assignments or changing of the weighting for the final evaluation. If you miss the midterm exam

with a legitimate medical excuse, the weighting of the midterm will be added to the final exam weighting. Without a legitimate excuse, a mark of zero will be given to the midterm and there will be no change in the weighting for the final grading. If you cannot write the mid-term or the final exam which are scheduled outside of normal class time due to a scheduling conflict with another course, a 'reasonable accommodation' will be arranged. Please notify me as soon as possible and not less than two weeks before the test date if you require an accommodation. <u>If you need special exam accommodations</u>, you need to apply two weeks before the scheduled exam.

Special Examinations

If, due to the most serious of circumstances (e.g., hospitalization, serious illness or other emergency), you are unable to write a required final examination, you may appeal for a special examination. In the event your request is granted, you will be given only one opportunity to have a special exam. If you miss it, you will receive a grade of F on your final exam. If you think you are going to miss your final exam, you should contact me immediately. Ideally this should be before the exam and no later than 48 hours after the exam is over. You must explain the situation in sufficient detail for me to determine whether or not you meet the criteria of "serious illness or emergency." Hard copy, documentary evidence supporting your request should be delivered to me no later than one week after the missed exam. Vague or incomplete information (for example, a doctor's note indicating 'excused from school') is not adequate to obtain a special exam. If I deny your request for a special examination, you may appeal that decision to the Special Exam Request Review Panel whose decision will be final. Written appeals can be submitted to the Panel through the B.Comm. Advising Office (SB208) or via email at sobey.bcomm@smu.ca

Cell Phones

The using of cell phones for texting, tweeting or any other activity during the lecture period is a sign of a lack of respect for the faculty member and your fellow students – it is a sign of bad manners and it is not acceptable. If you cannot survive the lecture period without texting or responding to a text or a tweet, leave the classroom. You can take the notes the next time you take the course!

FINA3361 Assignments
Requirements for Assignments

Assignments that **do not** meet these requirements **WILL NOT BE MARKED** and you will receive 0 for the submitted work.

1. Complete assignment questions **exactly** as they appear in the assignment outline.

2. Assignments are due before noon of the due date. Remember that this is the latest time that the assignment will be accepted. There is nothing to prevent you from submitting early. **Late assignments are not accepted and 12:01 is deemed to be late!!!**

3. Show all of your work. Marks are allocated for the process not just the final answer. If a question is worth 10 marks, 8 marks are allocated for the process and two for the final answer. If you just submit the final answer, you get 2 marks out of 10. On the other hand, you could show all of your work and have a wrong final answer and still receive 8 out of 10.

4. Rounding of numbers is not acceptable except for the final answer where the answer should be stated in dollars and cents for a value or a percentage for return (ie 14.36%). *__Individual calculations should maintain a minimum of 7 decimal points.__* If you round, the marks allocated will be rounded that is fair.

5. You are encouraged to work in groups and to compare answers, but, please do not just copy another student's work and submit. Make sure the work is your own. **Copied work will result in both papers being assigned a mark of 0.** Faculty have zero tolerance and zero compassion for those students that copy work and submit the copies work for evaluation. Please note that searching the internet and copying and pasting answers from the internet is still considered cheating.

7. The declaration cover sheet for assignments *must* be used and signed. Assignments submitted without the cover sheet will not be marked.

8. **DO NOT** use small binders or duo tang covers. All assignments are to be stapled in the top left hand corner.

9. If an assignment requires the use of an excel spreadsheet, the use of the spreadsheet is mandatory. Questions that require the use of a spreadsheet will receive a mark of 0 if the spreadsheet is not used.

10. Make sure the assignment is placed in the appropriate assignment box located on the second floor of Loyola. Assignments placed in the wrong box or at my office will not be accepted and receive a mark of 0.

FINA3361 – Introductory Business Finance
DECLARATION COVER SHEET FOR ASSIGNMENTS

NAME: _____

STUDENT NUMBER: _____

SECTION: _____ PROFESSOR: _____

ASSIGNMENT NUMBER: _____

"It is the student's responsibility to have a reasonable level of maturity and self-discipline. …… There may be times where there may be pressure to obtain high grades through dishonest means – cheating or plagiarism. The integrity of the University and the degrees are compromised by such activities and such acts are not tolerated under any circumstances. The University will undertake appropriate disciplinary action." Saint Mary's University Calendar, Academic Regulation 19 – section a.

"Plagiarism is the presentation of words, ideas or techniques of another as one's own. Reference to or appropriation of another's work by direct quotation or paraphrase must be acknowledged by proper citation. …. The above definition of plagiarism is not restricted to literary works and applies to all forms of information or ideas that belong to another (e.g. computer programs, mathematical solutions, scientific experiments, graphical images or data). Saint Mary's University Calendar, Academic Regulation 19 – section b.

"Cheating is the attempt to secure a grade by unethical means. Knowingly assisting someone to cheat is itself cheating. Cheating would include such practices as:
  (i)   arranging for someone to impersonate oneself at an examination or the impersonation of another at an examination;
  (ii)   requesting, providing or accepting unauthorized assistance on a test;
  (iii)   possession of unauthorized materials at a test;
  (iv)   unauthorized procurement of a copy of an exam;

Anybody observed committing one of the above offenses is presumed guilty of cheating unless the student can establish his/her innocence." Saint Mary's University Calendar, Academic Regulation 19 – section c. This includes the copying of another student's work – authorized or unauthorized.
A mark of zero will be assigned to any assignment that violates any of the above.
The student affirms that

☐	This assignment is not copied and is of my own work.
☐	I have acknowledged source material through proper citations or references

Signature: _____ Date: _____

Assignments submitted without this cover sheet will receive a mark of 0

Weekly Schedule

Date	Chapter	Description
	Introduction	Course requirements
	7	Sections 7.2, 7.3 & 7.4
		Types of Bonds
		- fixed rate bonds
		- floating rate bonds
		- financial engineering – stripped bonds/consol bonds
		Bond Indenture – Trust Deed
		Bond features
		- call feature
		- retractable feature
		- extendible feature
		- convertible feature
		- sinking fund feature
		Bond Covenants
		Bond Markets
		Bond Ratings
	14	Cost of Capital
		Weighted Average Cost of Capital (WACC)
		Cost of borrowing using debt
		Cost of borrowing using preferred shares
		Cost of borrowing using equity
		- internally generated funds versus externally generated funds
		Weights of the sources of funding
		- book value/market value/target capital structure
		Risk Adjusted Divisional or Project WACC
		- pure play and the risk adjusted beta
		Net present value analysis (from FINA2360)
Sept. 20/13		**Assignment #1 due at noon**
	15	Raising Capital (Omit 15.9)
		The Public Issue
		- the IPO vs. a seasoned offering
		The basic procedure for a new public issue.
		- best effort/bought deal/private placement

Date	Chapter	Description
	15	The Dutch auction
		The cost of issuing securities
		The rights offering
	16	Financial Leverage and Capital Structure Policy
		Operating leverage (chap. 11 pages 325 – 328)
		Financial leverage
		Combined leverage
		EBIT-EPS Indifference Analysis
Oct. 18/13		**Assignment #2 due at noon**
		Modigliani and Miller Models – Capital Structure
		- proposition I – the value of the firm
		- proposition II – the cost of borrowing
		- world I, world II and world III
		Repurchasing of stock (not in text)
		- see power point file on the 'p' drive.
October 25/13		**Midterm Exam 5:30 pm – 7:30 am**
	17	Dividends and Dividend Policy
		Cash dividends
		Stock dividends
		Stock splits
		Factors effecting low/high payouts
		Does dividend policy matter?
		Homemade dividends
Nov. 1/13		**Assignment #3 due at noon**
	25	Options
		The basic characteristics
		Intrinsic value and time value of the option contract
		In-the-money, at-the-money and out-of-the-money
		Basics – calls and puts values
		Payoffs
		- buying (going long in) the call
		- selling (going short or writing) the call
		- buying (going long in) the put
		- buying (going short in or writing) the call
		Investment strategies
		- straddle/strap/strip strategies
		Factors that affect option values.
Nov. 15/13		**Assignment #4 due at noon**

Date	Chapter	Description
	22	**Leasing**
		Types of leases
		Accounting and leasing
		Lease or buy? Net advantage of leasing (NAL)
		Determining lease payments
		Reasons for leasing
		Review
		Final Exam 3 hours

Formulas from FINA2360 you may find helpful:

$$PV_0 = \frac{FV_t}{(1+r)^t} \qquad FV_t = PV_0\,(1+r)^t \qquad PV_0 = C\left[\frac{1 - \frac{1}{(1+r)^t}}{r}\right] \qquad r = \left(\frac{FV}{PV}\right)^{1/t} - 1$$

$$FV_n = C\left[\frac{(1+r)^t - 1}{r}\right] \qquad PV_0 = \frac{C}{r} \qquad PV_0 = \frac{C}{r-g}$$

$$PV_0 = \frac{C}{r-g}\left[1 - \left(\frac{1+g}{1+r}\right)^t\right] = C\left[\frac{1 - \left(\frac{1+g}{1+r}\right)^t}{r-g}\right]$$

$$FV_t = C\left[\frac{(1+r)^t - (1+g)^t}{r-g}\right] \text{ (NOT IN TEXT)}$$

$$EAR = \left(1 + \frac{APR}{m}\right)^m - 1 \qquad EAR = e^{APR} - 1 \qquad EPR = \left(1 + \frac{APR}{m}\right)^{\frac{m}{f}} - 1$$

$$B_0 = C\left[\frac{1 - \frac{1}{(1+r)^t}}{r}\right] + \frac{F}{(1+r)^t} \qquad CY = \frac{\text{annual interest}}{\text{current market price}}$$

$$\frac{x\% - lower\%}{higher\% - lower\%} = \frac{PV_{x\%} - PV_{lower\%}}{PV_{higher\%} - PV_{lower\%}}$$

$$YTM_{approx} = \frac{\left[coupon\ interest + \frac{(face\ value - market\ value)}{periods\ outstanding}\right]}{\left[\frac{market\ value + face\ value}{2}\right]}$$

$$P_{ps} = \frac{D_p}{r} \qquad P_0 = \frac{D_0(1+g)}{r-g} = \frac{D_1}{r-g} \qquad P_t = \frac{D_{t+1}}{r-g} \qquad r = \frac{D_1}{P_0} + g$$

$$P_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+r)^t} \qquad P_0 = \frac{D_1}{(1+r)^1} + \frac{D_2}{(1+r)^2} + \ldots \frac{D_t + P_t}{(1+r)^t}$$

$$r = \frac{D_{t+1}}{P_t} + \frac{P_{t+1} - P_t}{P_t} = \frac{D_{t+1} + P_{t+1} - P_t}{P_t} \qquad P_0 = \frac{EPS_1}{r} + PVGO$$

$$Dividend\ yield = \frac{D_{t+1}}{P_t} \qquad Capital\ gains(loss)\ yield = \frac{P_{t+1} - P_t}{P_t}$$

$$NPV = -ICF_0 + PVOCF + PVTS + PVTCF \qquad PI = \frac{PV\ cash\ inflows}{PV\ cash\ outflows}$$

$$ICF_0 = C_0 + \Delta NWC + OC + FC$$

$$PVTS = \left[\frac{I_0\ d\ T}{d+r}\right]\left[\frac{1+0.5\ r}{1+r}\right] - \left[\frac{S_n\ d\ T}{d+r}\right]\left[\frac{1}{(1+r)^t}\right]$$

Prof. Fletcher's Class $PVTS = \left[\dfrac{C_0\ d\ T}{d+r}\right]\left[\dfrac{1+0.5\ r}{1+r}\right] - \left[\dfrac{S_n\ d\ T}{d+r}\right]\left[\dfrac{1}{(1+r)^t}\right]$

$$PVTCF = \frac{SV_n + \Delta NWC + TL - Recap\ CCA + CapGain}{(1+r)^t}$$

Chapter 14: Cost of Capital

$$R_p = \frac{D_{ps}}{P_{np}} \qquad R_E = \frac{D_1}{P_0} + g = \frac{D_0(1+g)}{P_0} + g \qquad P_n = \frac{D_{n+1}}{R_E - g} \quad P_0 = \frac{D_1}{R_E - g}$$

$$R_{NE} = \frac{D_1}{P_{np}} + g = \frac{D_0(1+g)}{P_{np}} + g \qquad R_{NE} = \frac{P_0}{NP_{NE}} \times R_E \qquad CF_{adjusted} = \frac{CF_0}{(1-f_a)}$$

$$CAPM = SML = (R_E) = R_f + \beta_E\left[(R_M) - R_f\right] \qquad f_a = W_D f_D + W_p f_p + W_e f_e$$

$$WACC = W_D R_b(1-T) + W_P R_P + W_E R_E = \frac{D}{V}R_b(1-T) + \frac{P}{V}R_P + \frac{E}{V}R_E$$

$$WACC = W_D R_D + W_P R_P + W_{NE} R_{NE} = \frac{D}{V}R_D + \frac{P}{V}R_P + \frac{E}{V}R_{NE}$$

$$\beta_{ASSET} = \beta_U = \frac{\beta_{levered\ firm}}{1 + (1-T)(D/E)}$$

Chapter 15: Raising capital

$$R_o = \frac{M_0 - S}{N+1} \qquad V_R = \frac{P_{on} - P_s}{N+1}$$

$$R_o = M_o - M_e \qquad V_R = P_{on} - P_{ex}$$

$$R_o = \frac{M_e - S}{N} \qquad V_R = \frac{P_{ex} - P_s}{N}$$

$\dfrac{M_o}{M_e}$ = common share price during rights-on period / rights off period

$$N = \frac{\# \, of \, existing \, shares}{\# \, of \, new \, shares}$$

Chapter 16: Financial leverage and capital structure policy

$$DOL = \frac{EBIT + Fixed \, Costs}{EBIT} = \frac{Sales - Variable \, \cos ts}{EBIT} = \frac{\% \, change \, EBIT}{\% \, change \, sales}$$

$$DFL = \frac{EBIT}{EBIT - Interest} = \frac{\% \, change \, EPS}{\% \, change \, EBIT} \quad DCL = \frac{\% \, change \, EPS}{\% \, change \, sales}$$

$$DCL = DOL \, x \, DFL$$

$$EPS = \frac{(EBIT - I)(1 - T) - D_P}{shares \, \%_S}$$

General formula for M&M

$$V = E + D$$

$$E_L = \frac{(EBIT - I)(1 - T)}{R_E^L} \qquad P_{Offer} = \frac{V_e + \Delta V_L}{shares \, ^O/_S} = \frac{V_e + (V_L - V_L)}{shares^O/_S}$$

$$R_E^L = \frac{(EBIT - I)(1 - T)}{E_L} \qquad P_{new} = \frac{V_E}{shares^O/_S - \frac{proceeds \, of \, issue}{pffer \, price}}$$

World I

$$V_U = V_L \qquad V_u = \frac{(EBIT)}{R_E^U} = V_L = E_L + D_L \qquad WACC^U = W_D R_D + W_E R_E = WACC^L$$

$$R_E^L = R_E^U + \left(R_E^U - R_D\right)(1 - T)\left(D\!\!\bigg/_{E_L}\right)$$

World II

$$V_L = V_U + TD \quad WACC = W_D R_D (1 - T) + W_E R_R \qquad R_e^L = R_e^U + \left(R_e^U - R_D\right)(1 - T)\left(D\!\!\bigg/_{E_L}\right)$$

World III

$$V_L = V_U + TB - PV \, of \, financial \, distress$$

Chapter 24: Derivative securities and corporate finance

$$C = IV_C + TV_C \qquad IV_C = \max(P_0 - X, 0) \qquad IV_C = \max \begin{cases} P_0 - X \\ 0 \end{cases} \qquad TV_C = C - IV_C$$

$$P = IV_P + TV_P \qquad IV_P = \max(X - P_0, 0) \qquad IV_P = \max \begin{cases} X - P_0 \\ 0 \end{cases} \qquad TV_P = P - IV_P$$

Chapter 22: Leasing

$$NAL = I_0 - L(1-T)\left[\frac{1 - \frac{1}{(1+r)^t}}{r}\right](1+r) - \left\{\left[\frac{I_0 dT}{d+r}\right]\left[\frac{1+.5r}{1+r}\right] - \left[\frac{SdT}{d+r}\right]\left[\frac{1}{(1+r)^t}\right]\right\}$$

$$-\frac{S_n}{(1+r)^t} \pm \Delta CF(1-T)\left[\frac{1 - \frac{1}{(1+r)^t}}{r}\right]$$

Prof. Fletcher's formula

$$NAL = CLA_0 - \left\{ \begin{array}{l} L(1-T)\left[\dfrac{1 - \frac{1}{(1+r_l)^n}}{r_l}\right](1+r_l) + \left[\dfrac{CLA_0 dT}{d+r}\right]\left[\dfrac{1+.5r}{1+r}\right] - \left[\dfrac{SdT}{d+r}\right]\left[\dfrac{1}{(1+r)^t}\right] \\[2em] + \dfrac{S_n}{(1+r)^t} \pm \Delta OCF(1-T)\left[\dfrac{1 - \frac{1}{(1+r)^t}}{r}\right] \end{array} \right\}$$

$r_l = r_d(1-T)$

NAL = Investment − PV (after-tax lease payment) − PVCCATS − PV (Salvage)

   ±PV ΔOperating CF