Engineering Economy

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EGC 201 G

Welcome!

- Your syllabus tells you
  - Website
  - Learning objectives
  - Grading
  - Quizzes
  - Tests
  - Project
  - Disability statement
- A few ground rules
  - Respect
  - Cell phones
  - Attendance
  - Honor Code
  - Focus

Think about it …

- What factors would influence the following decisions?
  - Buying a new car (whether or not to, what kind, from where, etc.)
  - Renting –vs- buying a house
  - Going to graduate school or straight into the job market upon graduation

Key Phrase: "Time Value of Money"

- Fundamental concept of Engineering Economy
  - The change in the amount of money over a given time period is called the *time value of money*.
- Money makes money.
  - When borrowing money, over time more is owed than amount borrowed.
  - When lending, over time more is received than the amount loaned.

Why is Engineering Economy important?

- Practical everyday questions:
  - Should you finance your car or pay cash? Finance for $6995 –vs- pay $4000 in cash. At what interest rate would you have to invest the $4000 so either option is equivalent?
  - Buying a new car: should you take 0% financing for the next 4 years, or a $2000 cash rebate?
  - Buying or renting a house: should you continue to pay $625 per month in rent or buy a house for $120,000 at an interest rate of 6%?
  - What is the economic benefit of going on to graduate school?

Why is Engineering Economy important?

- As an Engineer
  - Engineers tend to work on projects. Projects use capital (money) to improve a process, develop a new product, improve a product , improve the safety of a process, etc…
  - Engineers are typically responsible for "writing the project" which determines the cost of the project and the return on investment.
  - When doing a project study, Engineers compare and contrast alternative options for accomplishing the goals of a project. These alternative are often compared from an economic standpoint. (e.g., Lease -vs- Buy, Payback period, Rate of Return, Return on Investment.)