

## Scheduling: Time and Money

Week 10  
Construction Estimation, Planning  
and Control

## Contractual Issues

- Ownership of Float: Owner or Contractor?
  - Consequences of using float on an activity/path
- Progress Schedules
- Progress Payments
  - Itemized breakdown of contract price
  - Schedule of payments
- Delays and Liquidated Damages
  - Unavoidable delays: Change orders

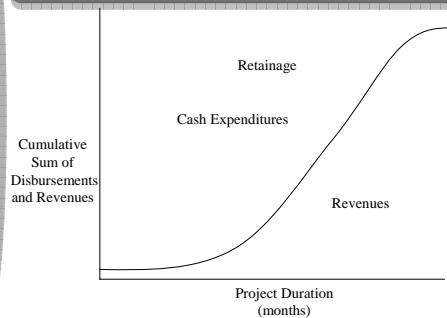
## Money and Schedules

- Contractor's cash flow
  - Time value of money
  - Interest rates
- Cash Disbursements
  - Material, labor, equipment, subs
  - Insurance, surety, bonds, overhead

## Contract Provisions and Cash Flow

- Payment Schedules:
  - Unit price contracts
  - Lump sum contracts
- Retainage
  - % withheld by the owner on every payment
- Materials
  - Lead times on delivery
- Mobilization
  - Depends on the contract
- Monthly and Final Payments

## Cash Flow Analysis



## Time Cost Trade-offs

