Exam 1 Review

Table of Contents

[**Notes from Instructor** 2](#_Toc517080710)

[**Exam Questions** 2](#_Toc517080711)

[**Midterm Topics** 2](#_Toc517080712)

[Estimating 2](#_Toc517080713)

[Developing a project plan (activity networks) 2](#_Toc517080714)

[Risk management 2](#_Toc517080715)

[Monitoring progress 2](#_Toc517080716)

[Managing project teams 2](#_Toc517080717)

[Software process improvement 2](#_Toc517080718)

[PowerPoint Review 3](#_Toc517080719)

[01-Admin 3](#_Toc517080720)

[02-Modern 4](#_Toc517080721)

[03-PMBOK 5](#_Toc517080722)

[Organization Types 5](#_Toc517080723)

[Definitions 5](#_Toc517080724)

[Knowledge Areas 5](#_Toc517080725)

[04-Agile 7](#_Toc517080726)

[Manifesto 7](#_Toc517080727)

[Methods 7](#_Toc517080728)

[Barriers 8](#_Toc517080729)

[06-WBS 9](#_Toc517080730)

[Project Scope 9](#_Toc517080731)

[Project Charter 9](#_Toc517080732)

[Project Communication Plan 9](#_Toc517080733)

[Who, what and how of information channels 9](#_Toc517080734)

[Talking 9](#_Toc517080735)

[Project Stakeholder Management 9](#_Toc517080736)

[07-Estimating 9](#_Toc517080737)

[Top down 9](#_Toc517080738)

[Bottom up 9](#_Toc517080739)

[7 guidelines 9](#_Toc517080740)

[Types of Costs 10](#_Toc517080741)

[08-Activity Plans 11](#_Toc517080742)

[09-Risk 12](#_Toc517080743)

# **Notes from Instructor**

## **Content**

Up to Cumulative Acknowledgement with unbounded sequences

# **Midterm Topics**

# PowerPoint Review

## CH1-Introduction

### Definitions

1. Node
   1. PC, special purpose hardware
2. Direct links
   1. Point 2 Point
      1. Dedicated link between two nodes
   2. Multiple access
      1. Many nodes share a broadcast medium
3. Network
   1. Two or more nodes connected by a link
   2. Two or more networks connected by a link
4. Address
   1. Byte string that identifies a node
      1. Unicast, node specific
      2. Broadcast, all nodes
      3. Multicast, some subset of the nodes
5. Peer-to-peer
   1. Interactions between same osi level processes
6. Service interface
   1. Interaction between lower level osi to upper level process
7. Bandwidth
   1. Bits per second
8. Throughput
   1. Number of useful bits per second
9. Latency
   1. Propagation + Transmit + Queuing + Processing
10. RRT
    1. Round trip time
    2. Time to put packet on link, latency, receive ack

### Main Points

1. This course is about:
   1. General purpose computer communication networks
   2. Fundamental concepts and principles; challenges and tradeoffs
   3. Internet Perspective
   4. Networking System Software (with overview of hardware)
   5. Engineering of a Scalable Network
2. Switching Strategies
   1. Circuit
      1. Bit streams
      2. No idle
      3. Fixed path
   2. Packet
      1. Source to destination
      2. Break message into independent pieces
3. Multiplexing – sharing a link
   1. FDM Frequency division
      1. Cons
         1. Frequency unused
   2. STDM-Synchronous Time division
      1. Cons
         1. Time slots unused
   3. ATDM – Asynchronous Time Division
      1. Pros
         1. Time is not slotted
         2. Don’t allow link to be idle
      2. Cons
         1. Fairness
         2. Congestion
4. Inter-process communication
   1. Achieved with abstraction of channels
   2. Process to process
      1. Request/reply
      2. Message stream
      3. Reliable message stream
5. Reliability
   1. Goal is to hide failures
      1. Messages dropped
      2. Message delayed
      3. Messages out of order
      4. Messages duplicated
6. OSI
   1. Application
   2. Presentation
      1. Format of exchanged data
   3. Session
      1. Tie multiple transports together

--------------------OS Boundary -----------------------------------

* 1. Transport
     1. Process to process
  2. Network
     1. routing
  3. Data Link
     1. Single hop
  4. Physical
     1. Raw bits

## CH2-CRC

### Definitions

1. CRC – cyclic redundancy check
2. M – message
3. N – appended constant number of bits to message M
4. G – n +1
5. M \* xn – M followed by n zeros
6. R = (M \* xn ) / G

### Main Points

1. Modulo2
   1. Addition
      1. XOR
   2. Subtraction
      1. XOR

## CH2-Encoding-and-Framing

### Definitions

### Main Points

## CH2-Hamming-and-Parity

### Definitions

### Main Points

## CH2-ReliableDelivery

### Definitions

### Main Points

## CH2-ReliableDelivery-II

### Definitions

### Main Points