

# Computer Networks COE 351

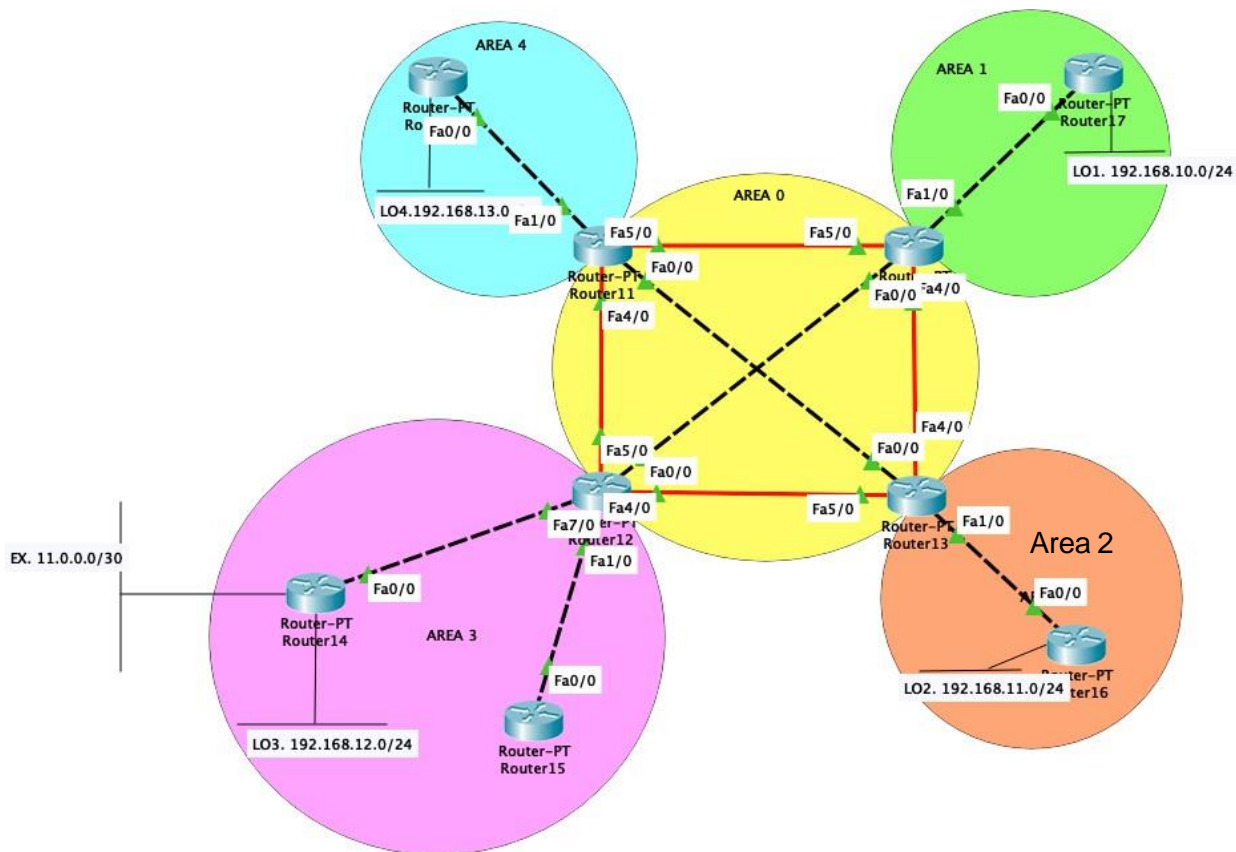
## Final Project

**Deadline: Week 17<sup>th</sup>, Tuesday 11:59 PM.**

**No late submissions will be accepted.**

### Instructions:

- Team Work: you must work with teammate (from 3 to 6 students per group) and **one of the student should submit the project.**



## Project

You need to follow the topology in figure 1.

### You need to do the followed:

1. Chose the IP's for the routers and use subnet 30, and write why we used that? (write the IP addresses next to the interface).
  - Use IP address X.0.0.0/30 for example and change the X to be your last 2 digits on your student ID.
2. Area number should match of X except the one in area 0. EX if IP is 10.10.0.0 area should be area 10. For LANs use 192.168.X.0 change X to be the same as your area ID. on area 2, the second VLAN X will be (area ID + 4).
3. For the LAN's:
  1. LAN in area 3 should have around 8000 users. (chosed the closest number to 8000 users but not less than 8000 users).
  2. Lan in area 4 should have 500 users.
  3. Area 2 should contain two VLANs:
    1. VLAN 1 should be class C
    2. VLAN 2 should have 3000 users.
  4. LAN in area 1 should have around 60000 users.
4. Each LAN and VLAN should have DHCP service.
5. Use OSPF routing protocol with the areas shown on the figure. (copy the commands on your report)
6. Use show command to show the next for router 12, router 17, router 14:
  - neighbors

- database
  - database summary.
7. Chose the area type carefully and write the reason why have chosen it for each area.
- Area 1 and 4 has routers with small memory and lesser CPU.
8. Show the cost from Router 14 to Router 17 and show all the paths. Define which one is shorter. Do Q.8 with the default reference B/W and see if you have to change it, Explain.

## Submission Requirements

- You must submit all the following files (**a total of two files**): .
  - Professional report in pdf format, including
    - Group names.
    - A screenshot shows that IP addresses
    - Answer for the all questions and include related theory part for each
  - Packet Tracer file .pkt

## Assessed Penalties:

Situation	Penalty
Late submission	Not accepted
Plagiarism or disallowed collaboration	At minimum negative grade
Failure to include the full report with <b>thoughtful screenshots</b>	Up to 25%
Failure to include all required information	Up to 25%

**Good Luck!**