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| **Faculty**: Information Communications Technology  **Course Name:** Computer Architecture  **Course Code:** BICA2210  **Class:** BSCITY2S2  **Program:** BSc in Information Technology  **Assessment:** Capstone Project 2  **Weight:** 20%  **Venue:** FICT Workshop  **Duration:** Week 13 to Week 15, 2025  **Tutor**: M. Borotho |

**Capstone Project Topics:**

1. **Basics of Cache Memory (Hierarchy, Purpose, Speed vs. Cost):**

1.Palesa Peimane

2.Masethuntsa Nthapo

3.Mpho seutloali

4.Nthabeleng Mpenyane

5.Ts'epo Ts'enoli

6.Tumelo Hlabanyane

1. **Cache Mapping Techniques (Direct, Associative, Set-Associative)**
2. Lehlohonolo Masilo
3. Pheko Kompi
4. 'Mapali Mahao
5. Molefi Nkopane
6. Relebohile Rankhotha
7. Khali Topollo
8. **Cache Replacement Policies (LRU, FIFO, Random)**

1. Ts'olo Lethuoa

2. Molapo Ts'iame

3. Lumka Mdandalaza

4. 'Mamahali Matela

1. **Write Policies (Write-Through vs. Write-Back)**

1. Refiloe Mats'oele

2. Faso Masoabi

3. Motlatsi Ts'oene

4. Mpine Moeti

5. Limpho Moropane

6. Reekelelitsoe Ts'oaeli

1. **Multilevel Caches (L1, L2, L3, Shared vs. Exclusive)**
2. Lieketseng Mofubetsoana
3. Diana Banda
4. Mantlobo Matsutsu
5. Katleho Mabethoane
6. **Cache Performance & Optimization (Hit/Miss Ratio, Prefetching)**
7. Thapelo Motaba
8. Mathabo Majoro
9. Kekeletso Lipholoana
10. Hlompho Lesenyeho
11. Lephallo Monkhe
12. Ts’epo Mats’osa
13. **RAID Basics (Purpose, Redundancy, Performance Benefits)**
14. Mpho 'Neko
15. Katiso Moshoeshoe
16. Mosili Ts'ebeletso
17. **RAID 0 & RAID 1 (Striping vs. Mirroring)**
18. Lefa Rapopo
19. Mohale Nonyana
20. Pontsho Kibane
21. Nhlapo Phethile
22. Nhlapo Sandile
23. **RAID 5 & RAID 6 (Parity-Based Redundancy)**

1.Bokang Mahlomaholo

2.Lekhetho Molise

3.Likhapha Fiee

4.Fako Mohale

5.Phakiso Mots'oane

1. **Nested RAID (RAID 10, RAID 50, RAID 60)**

1.Mokopu Makoetje

2.Thabang Lebelo

3.Thato Mphasane

4.Mothibeli Mosito

1. **RAID Controller & Implementation (Hardware vs. Software RAID)**

1.Hlomelang Rantheba

2.Mpho Liphepha

3.Libenyane Maluke

4.Bokang Molibeli

1. **RAID in Modern Systems (Use Cases, SSDs vs. HDDs**