B. Benarrous

**EXAM CATEGORIES – 1st SEM**

DIRS: Pick 3 topics to study, one from EACH category; you will be tested on ONE.

Know the related Vocabulary, Give Examples, and work out Problems.

1. **Boolean & Digital Logic**
2. Tables & Basic Operators (and, or, not, Xor, Xnor)
3. Expressions by DeMorgan’s + (Rewriting) Contrapos. (w/and, or, not).
4. Gates & Digital Circuits + 3 variable KMaps + Tables (minterms).
5. **Statements & Arguments**
6. Logic Stats + Venn Diagrams (Conditional, converse, contrapos, bicondit.)
7. Quantifiers (Translating & Negating Universals + Existentials)
8. Valid Args & Rules of Inference (Modus Ponens/Tollens, Transitive Law,

Inverse & Converse errors) w/Tables + Venn Diagrams

1. **Proofs, Definitions & Counterexs**
2. Divisibility Rules + GCFs & LCMs
3. Mod. Arithmetic & Shortcuts (BDays)
4. Recursion, Sigma Notation & Induction