1. Number Theory

- Modular Arithmetic
- Basic knowledge of Primes, Multiples, Divisors
- Bitwise Operations
- Euclidean Algorithm
- Sieve of Eratosthenes
- Binary Modular Exponentiation
- Combinatorics

2. Binary and Ternary Search

- General Binary Search
- Monotonic Functions (understanding and proving)
- C++ STL Functions
- Binary Searching on Answer
- Convex Functions
- Ternary Search (Basics)

2. Binary and Ternary Search - Resources

- Codeforces Edu Section
- Binary Search Video on this Channel
- CP Algorithms - Ternary Search

Links in Description

3. Greedy

- Standard Greedy Problems
- Learning to Prove your solution (optional: Exchange Arguments)
- Problems from Searching and Sorting section of CSES Problemset (First 50%)

3. Greedy - Resources

- Geeks for Geeks (Link in the description)
- Exchange Arguments (Video: Link in the description)
- CSES Problemset

Links in Description

4. Dynamic Programming

- Standard DP Problems
- Problems from DP section of CSES Problemset
- Basics of DP with bitmasking
- Basics of DP on Trees
- No need for iterative DP at this point

4. Dynamic Programming - Resources

- Errichto's DP Beginner Videos
- CSES Problemset
- Atcoder DP Contest
- Kartik Arora's DP Playlist
- Utkarsh Gupta's Atcoder DP Playlist

Links in Description

5. Trees

- Basic properties
- DFS
- Binary Lifting
- Finding LCA in LogN
- Trees section of CSES Problemset

5. Trees - Resources

- Tree Videos on this channel
- Galen Colin's Trees Topic Stream (Link in Desc.)
- Errichto's Binary Lifting Video
- CSES Problemset

Links in Description

6. Graphs

- Basic properties
- DFS, BFS
- Connected Components
- Directed Graphs Basics
- 1 Minimum Spanning Tree Algorithm
- Optional: (Disjoint Set Union Basics)

6. Graphs - Resources

- Galen Colin’s Topic Stream (Link in Desc.)
- William Fiset’s Graph Playlist
- CSES Problemset

Topics to NOT do

- Advanced Number Theory: Euler Totient Function, etc
- Range Query DS like Segment Trees, Fenwick Trees
- Binary or general Tries
- Advanced String algorithms (KMP, Z, Manacher's)
- Matrix Exponentiation
- Strongly connected components
- Euler Tour
- Heavy Light Decomposition
- Centroid Decomposition
- Square Root Decomposition
- DP Optimizations