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# Lecture Slides for Algorithm Design

These are the official lecture slides that accompany the textbook *Algorithm Design* [ [Amazon](#) · [Pearson](#) ] by Jon Kleinberg and Éva Tardos. The slides were created by [Kevin Wayne](#) and are distributed by [Pearson](#).

| TOPIC                            | SLIDES                                    | READINGS      |
|----------------------------------|---|---------------|
| Stable Matching                  | <a href="#">1up</a> · <a href="#">4up</a> | 1             |
| Algorithm Analysis               | <a href="#">1up</a> · <a href="#">4up</a> | 2             |
| Graphs                           | <a href="#">1up</a> · <a href="#">4up</a> | 3             |
| Greedy Algorithms                | <a href="#">1up</a> · <a href="#">4up</a> | 4.1–4.4       |
| Minimum Spanning Trees           | <a href="#">1up</a> · <a href="#">4up</a> | 4.5–4.7       |
| Huffman Codes †                  | <a href="#">1up</a> · <a href="#">4up</a> | 4.8           |
| Divide and Conquer               | <a href="#">1up</a> · <a href="#">4up</a> | 5.1–5.4       |
| Multiplication                   | <a href="#">1up</a> · <a href="#">4up</a> | 5.5–5.6       |
| Dynamic Programming              | <a href="#">1up</a> · <a href="#">4up</a> | 6.1–6.7       |
| Bellman-Ford                     | <a href="#">1up</a> · <a href="#">4up</a> | 6.8–6.10      |
| Maximum Flow and Minimum Cut     | <a href="#">1up</a> · <a href="#">4up</a> | 7.1–7.3       |
| Maximum Flow Applications        | <a href="#">1up</a> · <a href="#">4up</a> | 7.5–7.12      |
| Assignment Problem               | <a href="#">1up</a> · <a href="#">4up</a> | 7.13          |
| Intractability                   | <a href="#">1up</a> · <a href="#">4up</a> | 8.1–8.2       |
| Polynomial-Time Reductions       | <a href="#">1up</a> · <a href="#">4up</a> | 8.5–8.8, 8.10 |
| NP-Completeness                  | <a href="#">1up</a> · <a href="#">4up</a> | 8.3–8.4, 8.9  |
| PSPACE                           | <a href="#">1up</a> · <a href="#">4up</a> | 9             |
| Extending Limits of Tractability | <a href="#">1up</a> · <a href="#">4up</a> | 10            |
| Approximation Algorithms         | <a href="#">1up</a> · <a href="#">4up</a> | 11            |
| Local Search                     | <a href="#">1up</a> · <a href="#">4up</a> | 12            |
| Randomized Algorithms            | <a href="#">1up</a> · <a href="#">4up</a> | 13            |

† Lecture slides provided by Mathijs de Weerd.

