

General remarks

- Although covering the course contents, the essay should revolve around the provided set-up. You will not need to write everything that you have learned, just the relevant parts!
- In case that multiple options are possible you can provide a list of the options but rather pick one for more detailed description (for example: pick one of the different mechanisms how chromatin structure is opened)
- In case a process is optional (such as splicing of mRNA), you can include it or not. It is good to mention that it is a possibility in any case.
- You might need to update certain aspects later when progressing through the course materials.

Essential aspects from part I

- Active transcription activator X is present in nucleus
 - Binds to cis-regulatory sequence
 - Induces change of chromatin structure
 - End result -> assembly of transcription initiation complex
 - After part II, add how transcription activator X reaches the nucleus, after part III you can add how it becomes activated.
- Transcription process
 - Addition of cap and polyA tail mandatory, splicing is optional
 - Export ready mRNA is exported
- Translation process
 - Initiation & elongation & stop
 - Protein folding (*Part II will add a new twist to this!*)

