



FACULTY OF ENGINEERING & TECHNOLOGY  
DEPARTMENT OF BIOTECHNOLOGY

## Elongation step of Transcription

- As the elongation complex containing the core RNA polymerase progresses along the DNA molecule, DNA unwinding must occur in order to provide access for the appropriate base pairing to the nucleotides of the template strand.
- The extent of this transcription bubble (i.e., DNA unwinding) is constant throughout and is about 20 base pairs per polymerase molecule.



## Elongation step of Transcription

- RNA polymerase has associated with it an "unwindase" activity that opens the DNA helix.
- Topo isomerase both precedes and follows the progressing RNAP to prevent the formation super helical complexes.
- Base pairing rule is followed during the incorporation of ribonucleotides





