These instructions describe how to use the Field Calculator in ArcMap to do the conversion from DMS to DD:

If you have geographic coordinates in degrees, minutes and seconds and want to add locations to a map using ArcGIS you first need to convert these to decimal degrees. The coordinates in DMS based on the North American Datum of 1983 for the City of Guelph are the 43˚ 33' 36.60" North and 80˚ 15' 53.72" West. In DD the coordinates are 43.56017 N and -80.26492 W.

First assemble your coordinates in tabular format (excel, text or dbf) as illustrated in the example below. (The values must be stored in a table as degrees minutes seconds with no symbols.)

```
Location,latitude,longitude
Guelph,43 33 36.60,80 15 53.72
```

1. Add the tabular data to ArcMap. If the table is not in database format (.dbf) export the data. (Right-click the table in the table of contents, choose the option data and then export. In the Export Data dialog box provide a location and name for the table. Click Yes at the prompt to add the table to the map. The exported table will be in .dbf format.
2. Right-click on the .dbf table in the Table of Contents and select Open
   - Click the Options (on the lower right) button and select Add Field.
   - Enter Lat_DD in the Name field and select Double from the Type drop-down list.
   - Verify that the Scale and Precision is set to 0 and click OK.
3. Right-click on the Lat_DD field and select Field Calculator.
4. Click Yes if presented with a message box.
5. Check the Advanced check box.
6. Paste the following code into the Pre-Logic VBA box:
   ```vba
   Dim Degrees as Double
   Dim Minutes as Double
   Dim Seconds as Double
   Dim DMS as Variant
   Dim DD as Double
   DMS = Split([Latitude])
   Degrees = CDbl(DMS(0))
   Minutes = CDbl(DMS(1))
   Seconds = CDbl(DMS(2))
   DD = (Seconds/3600) + (Minutes/60)+ Degrees
   ```
7. Find the line that begins ‘DMS…’ The text within the brackets [] is the name of the field holding the latitude values. If the name of the field that stores the latitude values is different from your table replace it with the field name from your table.
8. Paste the following code into the Lat_DD = box at the bottom of the dialog box and click OK.
CONVERT DEGREES MINUTES SECONDS VALUES TO DECIMAL DEGREE VALUES

9. Repeat steps 2 through 8 to create longitude values in decimal degrees.
10. In the example for the City of Guelph, since the location is west of the Prime Meridian the longitude must be expressed as a negative value. To calculate these values right-click on the Long_DD field and select Field Calculator.
11. Enter the equation \([\text{Long\_DD}]^{-1}\) and click OK.