

## Intermediate SAS Programming Workshop

1. Review Basic SAS Programming, including
  - a. Read raw data from internal and external sources to input variables (with fixed format or free format).
  - b. Import data from different data type; such as SAS data set, spreadsheet data (include EXCEL, DBF and CSV type files), SPSS or other portable files.
  - c. Use length, informat, retain, keep and drop statements.
  - d. Manipulating data include transform data, use function, do loop, if-then-else, where command.
  - e. Use PROC (procedure) command: such as Sort, Freq, Means, Univariate, and Summary.
  - f. How to use OPTIONS statement properly.
2. How to use array statements.
3. How to take care of Missing value.
4. Univariate and Multivariate Statistical Analysis.
5. Use ODS command to write the report in different file types.
6. Questions and follow-up