

# NORTH CAROLINA CAREER AND TECHNICAL EDUCATION STANDARDS

## Computer Science and Information Technology Education

**Grade:** Grade 9 - 12

**Course:** SAS Programming I

**NCCTE.BP20** - SAS Programming I

**NCCTE.BP20.01.00** - Apply SAS Base programming concepts.

**NCCTE.BP20.01.01** - Apply basic Base procedures to access libraries and enhance readability.

**NCCTE.BP20.01.02** - Apply editing and debugging techniques to programming procedures.

**NCCTE.BP20.01.03** - Apply DATA STEP programming to create and debug data sets.

**NCCTE.BP20.01.04** - Apply an understanding of the fundamentals of SAS Syntax and rules of SAS programming to successfully run a program.

**NCCTE.BP20.02.00** - Apply techniques to create basic and advanced reports.

**NCCTE.BP20.02.01** - Apply PROC PRINT with options to create basic reports.

**NCCTE.BP20.02.02** - Apply PROC FORMAT, PROC REPORT, PROC MEANS, PROC SORT AND PROC FREQ to generate advanced reports.

**NCCTE.BP20.02.03** - Utilize Output Delivery System.

**NCCTE.BP20.03.00** - Apply advanced programming techniques to manipulate data sets.

**NCCTE.BP20.03.01** - Apply decision structure methods to conditionally assign values when creating and managing variables.

**NCCTE.BP20.03.02** - Apply modifying options to manipulate output.

**NCCTE.BP20.03.03** - Apply advanced programming methods to combine and manipulate data sets.

**NCCTE.BP20.04.00** - Apply advanced programming techniques to manipulate data.

**NCCTE.BP20.04.01** - Apply functions to manipulate and convert data.

**NCCTE.BP20.04.02** - Apply iterative processing and SAS arrays.

**NCCTE.BP20.05.00** - Apply advanced techniques to read data into SAS and manipulate records.

**NCCTE.BP20.05.01** - Apply SAS programming methods to read and handle standard and non-standard numeric data as well as standard and non-standard fixed-field data.

**NCCTE.BP20.05.02** - Apply SAS formats and informats to handle SAS date and time values.

**NCCTE.BP20.05.03** - Apply advanced SAS programming methods to read multiple records sequentially and non-sequentially to create a single record as well as to create multiple observations from a single record.

**NCCTE.BP20.05.04** - Apply advanced SAS programming procedures to read hierarchical files.

