



**DEPARTMENT OF BIOSTATISTICS**  
Biostatistics Resource and Training Centre  
Christian Medical College, Vellore - 632 002, India.

**Dr. L. JEYASEELAN**, M.Sc., Ph.D., F.R.S.S.,  
Professor & Head

August 18, 2010

Dear Friends,

Greetings from Vellore. The Biostatistics Resource and Training Center, Department of Biostatistics at Christian Medical College, Vellore is glad to announce the commencement of Seventeenth Short course in Biostatistics. This year the course is scheduled from November 29 to December 17, 2010.

The course is mainly designed to train researchers of varied profession and statisticians to competently handle health/medical data and be in a better position to function effectively in a research team.

Christian Medical College has conducted series of workshops in collaboration with faculty from McMaster University, Canada and University of North Carolina, Chapel Hill, USA since 1996. The course materials of those workshops are incorporated in this program.

The current Courses are:

Course	Duration
<b><i>Fundamentals of Biostatistics, Principles of Epidemiology &amp; Statistical Package for Social Science (SPSS)</i></b>	<i>November 29 - December 3, 2010</i>
<b><i>Multilevel Modeling (MLM) and Generalized Estimating Equations (GEE)</i></b>	<i>December 6 – 10, 2010</i>
<b><i>SAS (Statistical Analysis System) Software Training</i></b>	<i>December 13 – 17, 2010.</i>

The number of participants for each course is limited to 30, and admission will be purely on first come first served basis. The deadline for registration is 20<sup>th</sup> November 2010. The application form and brochure can be downloaded from [www.cmc-biostatistics.ac.in](http://www.cmc-biostatistics.ac.in) I will be very happy to provide more information, if necessary.

Looking forward to hearing from you.

Sincerely,

**Dr. L. Jeyaseelan**  
Course Coordinator

## Fundamentals of Biostatistics, Principles of Epidemiology & SPSS

This course is intended to introduce principles of Biostatistics, in a simpler manner to researchers who are in need of statistical application. This course is also intended to introduce principles and illustrate some of the basic methods of epidemiologic research and to improve the participant's ability to understand and use appropriate statistical procedures.

The course is targeted towards researchers of varied profession such as medicine, public health, life science, social science, nursing, epidemiology, biostatistics etc.

**Venue:** The course will be held at the Biostatistics Resource and Training Center (BRTC), Dept. of Biostatistics, (Adjacent to College Chapel), Christian Medical College, Bagayam, Vellore 632 002.

**Course Fee:** Nominally fixed at Rs 4,000/- per course. If more than one course is opted then Rs. 3,500/- per course will be charged, however the course fee for "SAS" course is fixed at Rs. 5,000/-.

**Accommodation:** Participants will have to bear their own expenses for travel, boarding and lodging. The Organizers will give lunch and snacks. **No on-campus accommodation facility is possible.** However, details of hotels in Vellore and their contact numbers is attached with this mail. Interested participants are requested to kindly contact the hotel of their choice from this list and make their own hotel bookings.

**Course Fee should be paid in full by 20<sup>th</sup> November 2010.** Payment can be made by Demand Draft in favor of "Christian Medical College Vellore Association Account", payable at Vellore.

The number of participants for each course is limited to 30 and admission will be purely on first come first served basis.

**Note:** After Registration, if cancelled, the course fee will not be refunded.

### Apply to:

Dr. L. Jeyaseelan

Professor & Course Coordinator,

Department of Biostatistics, Christian Medical College,

Bagayam, Vellore 632 002 Tamil Nadu

Telephone: 91-0416-2284205, 2262703 Fax: 91-0416-2262703

Email : [biostats@cmcvellore.ac.in](mailto:biostats@cmcvellore.ac.in) Website: [www.cmc-biostatistics.ac.in](http://www.cmc-biostatistics.ac.in)

## Course Content

### Fundamentals of Biostatistics

Descriptive statistics  
Probability and Distributions  
Tests of Significance  
Analysis of Variance  
Non-parametric Methods  
Correlation and Regression  
Sampling techniques  
Sample Size

### Basic Epidemiology

Measures of disease frequency  
Cohort study  
Cross-sectional Study  
Case control study  
Qualitative research  
Diagnostic test  
Clinical Trial

### Statistical Software:

SPSS (Analyses)

## Multilevel Modeling (MLM) and Generalized Estimating Equations (GEE)

This course is intended to introduce the concept of multilevel theories and statistical treatment of clustered data. This course enables the statisticians to understand the concepts of Multilevel Modeling (MLM), Generalized Estimating Equations (GEE) and their applications. This course also provides real time examples that will be analyzed using SAS software.

**Venue:** The course will be held at the Biostatistics Resource and Training Center (BRTC), Dept. of Biostatistics, (Adjacent to College Chapel), Christian Medical College, Bagayam, Vellore 632 002.

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## Course Content

### Multilevel Modeling (MLM):

#### Multi-stage sampling and multilevel theories

Macro, micro level units and cross-level relations

#### Statistical treatment of clustered data

Aggregation, disaggregation, Intra-cluster correlation coefficient (ICC), design effect in two stage sampling

#### The random intercept model

Definition, within and between group regressions, simple and multiple regression models

#### The random slope model

Introduction, analyses and interpretation, explanation of random intercept and slope

### Generalized Estimating Equations (GEE):

#### Introduction to longitudinal data

Traditional methods: Repeated measures Analysis of Variance, summary measures and relationship with other variables

#### Generalized estimating equations-The best approach

Introduction, working correlation structures, GEE for continuous and categorical outcome, interpretation and diagnostics (QIC)

#### MLM versus GEE

Comparison between random coefficients and GEE

#### Statistical Software:

MLWin and STATA

## SAS (Statistical Analysis System) Software Training

This course is intended to introduce the basic concepts to use SAS, in a simpler manner to researchers who are in need. This course is also planned to furnish the basic and some advanced statistical analyses techniques with real time datasets so as to improve the participant's ability to understand and interpret the findings.

The course is targeted towards researchers of varied profession such as medicine, public health, life science, social science, nursing, epidemiology, biostatistics etc.

**Venue:** The course will be held at the Biostatistics Resource and Training Center (BRTC), Dept. of Biostatistics, (Adjacent to College Chapel), Christian Medical College, Bagayam, Vellore 632 002.

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## Course Content

### Introduction to SAS:

Data Management Facility, Structure of SAS program, Data Analysis and reporting utilities.

Creating permanent libraries, using temporary and permanent data set within the libraries, Methods of importing data into SAS and saving datasets in SAS libraries.

### Data Manipulation / Transformation:

Creating new variables, operating logical expressions, recoding, variable and value labeling, sorting.

### Advanced Data manipulation techniques:

Renaming and retaining variables, Do Blocks & Do Loops, sub-setting datasets (select), working with arrays, generating multiple datasets, merging files, reshaping dataset.

### Descriptive Statistics:

Calculating Mean, standard deviation, displaying Normal curve, reporting frequencies.

### Testing Hypothesis:

Parametric tests: – independent t test, paired t test.

Non – parametric tests: - Mann Whitney U test (independent observations), Wilcoxon signed rank test (paired observations) and calculating the correlation coefficient.

### Advanced Statistical Techniques:

**Linear Regression:-** Simple linear regression, its interpretation, model building strategies and diagnostics.

**Logistic Regression:-** Performing logistic regression, interpretation of the output, model building methods and diagnostics, Log binomial regression.

**Survival Analysis:-** Estimating the survival probabilities, comparison of survival curves, obtaining regression estimates using Cox proportional hazards model, interpretation, model building and diagnostics.

### SAS Report and Macro writing

## Format of Application

**Name in Capital** \_\_\_\_\_  
(For Certificate purpose)

**Age** \_\_\_\_\_ **Sex** M / F

**Occupation** \_\_\_\_\_

**Activities** \_\_\_\_\_

**Address** \_\_\_\_\_

**State** \_\_\_\_\_

**Phone & Mobile** \_\_\_\_\_

**Email** \_\_\_\_\_

Educational Background

**Degree** \_\_\_\_\_

**Area of Concentration** \_\_\_\_\_

**Have you ever taken Epidemiology/Biostatistics  
Course earlier** Y / N

**Accommodation:** List of hotels available in Vellore is attached, please contact them directly

**Courses opted for** : (Please Encircle)

1. Fundamentals of Biostatistics, Principles of Epidemiology & SPSS
2. Multilevel Modeling (MLM) and Generalized Estimating Equations (GEE)
3. SAS (Statistical Analysis System) Software training

**DD Amount Rs.** \_\_\_\_\_ **Date:** \_\_\_\_\_

**DD Number:** \_\_\_\_\_ **Bank:** \_\_\_\_\_

## SHORT COURSE IN BIOSTATISTICS

Biostatistics Resource and Training Center  
Department of Biostatistics  
Christian Medical College  
Vellore 632 002

Invites Application to the Seventeenth short course in

## Fundamentals of Biostatistics, Principles of Epidemiology & SPSS

*November 29 - December 3, 2010*



**Last date for receiving application 20<sup>th</sup> November 2010**

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(for Certificate purpose)

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## SHORT COURSE IN BIOSTATISTICS

Biostatistics Resource and Training Center  
Department of Biostatistics  
Christian Medical College  
Vellore 632 002

Invites Application to the Seventeenth short course in

### Multilevel Modeling (MLM) and Generalized Estimating Equations (GEE)

*December 6 - 10, 2010*



**Last date for receiving application 20<sup>th</sup> November 2010**

DD Amount Rs. \_\_\_\_\_ Date: \_\_\_\_\_  
DD Number: \_\_\_\_\_ Bank: \_\_\_\_\_

### Format of Application

Name in Capital \_\_\_\_\_  
(for Certificate purpose)

Age \_\_\_\_\_ Sex M / F

Occupation \_\_\_\_\_

Activities \_\_\_\_\_

Address \_\_\_\_\_

State \_\_\_\_\_

Phone & Mobile \_\_\_\_\_

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Educational Background

Degree \_\_\_\_\_

Area of Concentration \_\_\_\_\_

Have you ever taken Epidemiology/Biostatistics  
Course earlier Y / N

**Accommodation:** List of hotels available in Vellore is attached, please  
contact them directly

**Courses opted for** : (Please Encircle)

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3. SAS (Statistical Analysis System) Software training

## SHORT COURSE IN BIOSTATISTICS

Biostatistics Resource and Training Center  
Department of Biostatistics  
Christian Medical College  
Vellore 632 002

Invites Application to the Seventeenth short course in

SAS Software Training  
(SAS - Statistical Analysis System)

*December 13 - 17, 2010*



**Last date for receiving application 20<sup>th</sup> November 2010**

**:: List of Hotels available at Vellore ::**

Hotels/Guest Houses	Type of Room	Charges**		Distance from Venue (approx)
		Single	Double	
Avana Inn Ph.0416-2228935	A/C Non A/C	Rs. 1588/- 850/-	Rs. 1688/- 1238/-	6 kms
Darling Residency Ph.0416-2213001-005	Standard A/C Deluxe A/C	1575/- 1800/-	1688/- 1930/-	3.5 kms.
River View Ph.0416-2222349	A/C Non A/C	935/- 605/-	1089/- 855/-	7 kms.
Hotel Grand Krishna Ph: 0416-2258189,289	A/c Standard A/c Executive	2250/- 3375/-	3375/- 3937/-	15 kms.
Surabi International Ph.0416-2216399	Standard A/C Executive AC	1575/- 1800/-	1688/- 1968/-	3.5 kms.
Baby Residency Ph.0416-2213285	A/C Deluxe A/C	1087.- 1350/-	1237/- 1575/-	3 mks.
Hotel Ganga Khanna Ph.0416-2223060, 2223160	A/C Non A/C	500/- 350/-	600/- 400/-	4 kms.
Hotel Park Avenue Ph.0416-2220767	A/C Non A/C	-	730/- 500/-	3 kms.
Arunachala Ph.0416-2210979	A/C Non A/C	-	850/- 350/-	6 kms
Solai Ph.0416-2220971	A/C Non A/C	-	700/- 400/-	6 kms.
AMP Lodge Ph.0416-3292652	A/C Non A/C	300/-	400/-	1 Km.
Ananda Bhavan Ph.0416-2266770	Non A/C	-	250/-	1 Km.

**\*\* Note: Rates may be subject to revision**