



# **Information Brochure for Statistical Fellow (Last Updated in January 2024)**



**Sanjay Gandhi Postgraduate Institute of Medical Sciences  
Raebareli Road, Lucknow, India**

## PROGRAM OFFERED

Post	Duration	Salary / Emoluments	Job
Statistical Fellow	One year (Extendible up to 03 years)	Rs 37000/- for 1st & 2nd years and Rs 42000/- 3rd year.	Research, Statistical Consultancy, Academic Activities, Hospital Information System management and other work assigned by department time to time.

## ELIGIBILITY CRITERIA

### Nationality

Only Indian nationals are eligible.

### Essential Educational Qualifications

Candidates must possess, as a requisite qualification from Departments / Institutions recognized by the UGC/AICTE etc. as applicable.

Post	Essential Qualification
Statistical Fellow	M.Stat / M.Sc. in Statistics / Biostatistics / Applied Statistics. OR Master of computer application (MCA) with mathematics and Statistics at Graduate level.

### Age

The upper age limit for eligibility of Statistical Fellows is 45 years as reckoned on cutoff date. Age relaxation to a maximum of 5 years may be given to SC/ST/OBC candidates having domicile of Uttar Pradesh. and to widowed / divorced / legally separated women who have not re-married, and to disabled/handicapped persons, as per Government rules.

### Reservation

As per UP Government rules. Only candidates having domicile of Uttar Pradesh will be eligible for the benefit of reservation. Reserved category candidates having domicile other than Uttar Pradesh will be treated as Unreserved category candidates for all purposes.

Reserved category candidates should produce certificate of their category in the prescribed format available on website hosted by the State Government. The certificate should be less than 6 months old.

### Application fee

Rs 1000, payable by Net Banking, Debit / Credit card or through a computer-generated challan form in any branch of State Bank of India through "State Bank Collect". Additional bank transaction charges may apply. The application fee is not refundable either in full or in part under any circumstances.

## Procedure for scrutiny

In case any candidate desires scrutiny of his result, he/she is required to apply in writing along with a fee of Rs. 3000 via demand draft in Favor of 'Director, SGPGIMS, Lucknow, Academic Account'. The result will be made available in three days after the request is made. No request for scrutiny will be entertained after three days of the publication of result.

## Important instructions

Additionally, a candidate who is found **NOT** eligible for the entrance examination, may request for a review of his/her application to the Executive Registrar of the Institute between .... after paying the prescribed fee of Rs. 1000 through a Bank Draft drawn in Favor of 'Director, SGPGIMS, Lucknow, Academic Account', payable at State Bank of India, SGPGI Branch, (IFSC Code: 7789), Lucknow. However no additional document or information other than that submitted with the original application form will be considered during such review. Request for review made after the above specified dates will not be considered.

## METHOD OF SELECTION

The Entrance Examination will be of total 100 marks (Part –A, 60 Questions, 60 Marks & Part–B, 20 Questions, 40 Marks).

An objective-type, examination of **180 MINUTES** duration, consisting of multiple-choice questions. Each question will have five options, and each option should be marked as TRUE or FALSE. The candidate should select the correct answer from the given options in the questions.

**Part A:** For each correctly marked response, 0.2 marks will be awarded. For each incorrectly marked response, 0.05 marks (25% negative marking) will be deducted. No marks will be awarded if a response is not marked.

**Part B:** For each correctly marked response, 0.4 marks will be awarded. For each incorrectly marked response, 0.1 marks (25% negative marking) will be deducted. No marks will be awarded if a response is not marked.

In case of tie, In the event of two candidates securing identical total marks, the candidate with higher marks in Part B will be ranked higher and if marks in Part B are also identical then the older candidate will be ranked higher.

## Qualifying marks

Candidates are required to obtain following minimum marks to qualify the test / Examination:

Examination component	Statistical Fellows	
	General / EWS/OBC	SC/ST
Part A (60 Questions, 60 Marks)	45%	40%
Part A + B (80 Questions, 100 marks)	45%	40%

## Selection Process for the Qualifying Candidates:

1. For the course / programs are being advertised, all the eligible qualified candidates need to be present in person in the COUNSELLING CENTER on the scheduled date and time at least one hour before the start of the process. During the counselling, all the candidates those get final selection need to undergo the document verification (original documents along with one set of the photocopy) and deposit the fee

immediately. After this, these candidates will get a provisional appointment letter. Such selected candidates need to join the respected course within 7 days from the date of issuing the appointment letter, failing which the seat will be awarded to the next candidate. After the 7 days, one another round of the counselling may be done for the vacant / unfilled seats where all other candidates (only those not selected in first round of the counselling) to be allowed to participate. The candidates once offered (the appointment/admission letter) for the course, must join the course in the stipulated time and such offered candidates will not be allowed to change or upgrade the course / program in any situation. In case in future, any seat is vacated, a seat will be offered to the next eligible candidate in order of merit as per the rule.

## 2. STEPS AFTER SELECTION

### Medical examination

No candidate will be permitted to join a course unless declared medically fit by the Medical Board constituted by the Institute for the purpose. The decision of the Board shall be final. Withholding information about current or past illness / treatment if discovered at a subsequent stage may result in appropriate disciplinary action that may include termination of appointment at any stage.

### Joining

If a candidate fails to join the Statistical Fellow by the date stipulated in the appointment /selection letter, the offer shall automatically stand cancelled, and the seat will be offered to candidates in the waiting list in order of merit.

### Duties and responsibilities

They will be required to perform such work as may be assigned to them and is necessary in the interest of patient care, teaching, training, research and in emergency services as and when required. All can be posted anywhere in SGPGIMS by the competent authority.

### Duration of appointment

All Statistical Fellows are appointed for a maximum period of 3 years subject to renewal after a satisfactory performance report from their departments at the end of every year.

### Salary:

Statistical Fellows are paid salary of Rs.37,000/ PM during his/her first- and second-year term, whereas for the third year the salary of Rs.42,000/ PM & other allowances as per rules during his/her term.

### Hostel accommodation:

All Statistical Fellows are required to reside in the campus. They are provided semi-furnished hostel as per the rules and policy of the Institute.

### Leave entitlement for Statistical Fellows:

The following leave is permissible

(Subject to change the rule time to time and decision of Competent Authority)

1	Casual Leave:	8 days in a complete calendar year
3	Earned Leave:	30 days per year
4	Maternity Leave	Up to 180 days to women candidates (for up to first 2 children)
5	Paternity Leave	Up to 15 days to men candidates (for up to first 2 children)

6	Medical Leave:	10 days
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## FEES

Fee structure (in Indian Rupees):

### (A) Statistical Fellows Program.

Particulars	1st year	2nd Year	3rd Year
Course Fees	12,000	12,000	12,000
Caution Money (Refundable)	20,000	-	-
Medical Subscription Fees	1,800	1,800	1,800
Library fees	500	500	500
<b>Total</b>	<b>34300</b>	<b>14300</b>	<b>14300</b>

**In case of leaving the program of Statistical Fellows:** As per rules applicable to senior residents.

## MISCELLANEOUS INSTRUCTIONS

- The date, time and venue of examination will be provided on the admit card.
- No TA/DA shall be paid for appearing in the entrance examination or for joining.
- The number of seats/posts indicated in the advertisement for various programs is provisional and subject to change without prior notice.
- Any attempt on the part of a candidate to suppress facts, to provide false information or to influence selection directly or indirectly will be treated as a disqualification. If evidence of this surfaces after selection, the services may be terminated and admission cancelled, even at that stage.
- Each selected candidate shall have to pay the fee/dues within the prescribed period, failing which his/her admission/appointment shall be cancelled.
- The selected candidates shall need to have present original documents (medical registration, date of birth certificate, certificates of educational qualification, experience and relieving and good conduct certificate from the University/Institution last attended) for inspection and verification by the Institute authorities and submit a self-attested copy of each at the time of joining.
- The training programs are full-time and continuous, and private practice in any form after joining the Institute is strictly prohibited. Any violation of this may leave to termination of appointment and cancellation of admission.
- Statistical Fellows admitted to the Institute shall maintain good conduct, attend their classes regularly and abide by the regulations/guidelines of the Institute failing which their names are liable to be struck off the rolls of the Institute.
- Participation in any agitation, protest, strike, etc. is prohibited. Candidates not abiding with these provisions are liable to be terminated.
- Ragging is strictly prohibited. If any incident of ragging comes to the notice of the authority, the concerned student shall be given liberty to explain and if his/her explanation is not found satisfactory, the authority would expel him/her from the Institute.

- No intimation to non-selected candidates will be sent and no correspondence on this subject will be entertained.
- These rules are subject to change in accordance with the decisions of the Institute, taken from time to time.
- The decisions taken by the Director of the Institute in all matters related to the selection of candidates for admission to various courses shall be final and no appeal shall be entertained on this subject.

### **Force majeure**

If the entrance examination is postponed or cancelled (in part or in full) due to any reason whatsoever beyond the control of the organizers (viz. elements of nature, force majeure or orders/directives issued by any competent government authority), the institute shall not be responsible for any loss or injury sustained by the candidates directly or indirectly.

### **Disclaimer**

The contents of the brochure are for information and guidance only, and not valid for any legal purpose. Although every precaution has been taken, the Institute accepts no responsibility for any printing errors.

### **Disputes**

All legal disputes are subject to the jurisdiction of judicature at Lucknow only.

**IMPORTANT:** For the advertised posts, candidates are required to submit their application form through online mode only, on or before the last date of application. There is no need to submit the filled application form by post or any other medium.

### **Syllabus**

- (i) Epidemiological Study Designs, Epidemiological estimations, Categorical data analysis, Probit /Ordinal / Multinomial logistic regression analysis, Factor analysis / Principal component analysis, Systematic review and meta-analysis, Cluster analysis / Discriminant analysis, Classification and Regression Tree (CART) analysis, Two-way Analysis, Analysis of Covariance, Multivariate Analysis of Covariance, Mixed linear Model, Matching (Propensity score / Case control), Reliability analysis (Cronbach alpha), Time series analysis and ARIMA Models. Descriptive Statistics (Measures of Central Tendency, Measures of Dispersion), Test of normality of data, Introduction of P/NP Methods, One sample t test, One sample Wilcoxon test, independent samples t test, Mann Whitney U Test, One Way ANOVA, Kruskal Wallis H test, Paired samples t test, Wilcoxon signed rank test, Repeated Measures ANOVA, Friedman Test, Chi-square test, Fisher exact test, McNamara's test, Univariable and multivariable binary Logistic regression analysis, Computation of Sample size / Power using Online and Offline available software's, Randomization in Clinical trials, Kaplan Meier Method, Cox proportional hazards model, Computation of Diagnostic accuracy, ROC Curve, Kappa agreement (Unadjusted and adjusted), Computation of Correlation coefficient (Pearson, Spearman)
- (ii) SPSS/STATA/R /Med Calc/Microsoft Excel/ MS Word/MS PowerPoint/ Graph pad/ Cochran Review/ Rev man software.
- (iii) Probability: Conditional probability, Bayes' theorem and applications. Discrete and continuous random variables. Distribution functions and their properties. Standard discrete and continuous probability distributions - Bernoulli, Binomial, Poisson, Exponential, Normal.
- (iv) Statistical Methods: Collection, compilation and presentation of data, charts, diagrams, and histogram. Frequency distribution. Measures of location, dispersion, skewness, and kurtosis. Bivariate and multivariate data. Association and contingency. Curve fitting and orthogonal polynomials. Bivariate normal distribution. Regression-linear, polynomial. Distribution of the correlation coefficient, Partial and multiple correlation, Intraclass correlation, Correlation ratio. Standard errors and large sample test. Sampling distributions of sample mean, sample variance, t, chi-square, and F; tests of significance based on them, small sample tests. Non-parametric tests-

Goodness of fit, sign, median, run, Wilcoxon, Mann-Whitney, Wald Wolfowitz and Kolmogorov-Smirnov. Order statistics-minimum, maximum, range and median. Concept of Asymptotic relative efficiency.

- (v) Linear Models: Theory of linear estimation, normal equations and least square estimators, One way and two-way classifications, fixed, random and mixed effects models. Analysis of variance (two-way classification only), multiple comparison tests due to Tukey, Scheffe and Student-Newmann-Keul-Duncan.
- (vi) Statistical Inference and Hypothesis Testing: Characteristics of good estimator. Estimation methods of maximum likelihood, minimum chi-square, Optimal properties of maximum likelihood estimators. Different types of critical regions and similar regions.
- (vii) Sampling Techniques: Concept of population and sample, need for sampling, complete enumeration versus sampling, basic concepts in sampling, sampling and non-sampling error, Methodologies in sample surveys (questionnaires, sampling design and methods followed in field investigation) by NSSO. Subjective or purposive sampling, probability sampling or random sampling, simple random sampling with and without replacement, estimation of population means, population proportions and their standard errors. Stratified random sampling, proportional and optimum allocation, comparison with simple random sampling for fixed sample size. comparison with simple random sampling. Systematic sampling (when population size (N) is an integer multiple of sampling size (n)). Estimation of population mean and standard error of this estimate, comparison with simple random sampling.
- (viii) Survival Analysis and Clinical Trial: Concept of time, order and random censoring, Life tables, failure rate, mean residual life and their elementary classes and their properties. Estimation of survival function – actuarial estimator, Kaplan – Meier estimator, estimation under the assumption of IFR/DFR, Cox’s proportional hazards model with one and several covariates, rank test for the regression coefficient. Introduction to clinical trials: the need and ethics of clinical trials, bias and random error in clinical studies, conduct of clinical trials, overview of Phase I – IV trials, multicenter trials. Data management: data definitions, case report forms, database design, data collection systems for good clinical practice. Design of clinical trials: parallel vs. cross-over designs, cross-sectional vs. longitudinal designs, review of factorial designs, objectives and endpoints of clinical trials, design of Phase I trials, design of single-stage and multi-stage Phase II trials, design, and monitoring of phase III trials with sequential stopping, Reporting and analysis: analysis of categorical outcomes from Phase I – III trials, analysis of survival data from clinical trials.
- (ix) Computer application and Data Processing: Basics of Computer: Operations of a computer, Different units of a computer system like central processing unit, memory unit, arithmetic and logical unit, input unit, output unit etc., Hardware including different types of input, output and peripheral devices, Software, system and application software, number systems, Operating systems, packages and utilities, Low and High level languages, Compiler, Assembler, Memory – RAM, ROM, unit of computer memory (bits, bytes etc.), Network – LAN, WAN, internet, intranet, basics of computer security, virus, antivirus, firewall, spyware, malware etc. Basics of Programming: Algorithm, Flowchart, Data, Information, Database, overview of different programming languages, frontend and backend of a project, variables, control structures, arrays and their usages, functions, modules, loops, conditional statements, exceptions, debugging and related concepts, Hospital information system, Internet and their protocols including security.