

**CURRICULUM AND SYLLABUS**  
*FOR*  
**ONE YEAR CERTIFICATE COURSE FOR CYTOTECHNOLOGIST**

*Offered by*  
**DR.B.BOROOAH CANCER INSTITUTE**  
**GUWAHATI-781016**

*Affiliated under*  
**SRIMANTA SANKARDEVA UNIVERSITY OF HEALTH SCIENCES, ASSAM**

## ONE YEAR CERTIFICATE COURSE FOR CYTOTECHNOLOGIST

### Course Title and Description

The course shall be called as "ONE YEAR CERTIFICATE COURSE FOR CYTOTECHNOLOGIST".

About the course: Cytopathology has emerged as subspecialty of pathology and has grown up extensively since its first inception by great Greek pathologist and physiologist Dr Goerge N Papanicolaou. Cytology procedures are minimally invasive and it can diagnose many of the pathological conditions in fairly short procedure time. As a result its popularity has increased at all level of health care ranging from small peripheral centers to tertiary level hospitals. So, there is greatly increased workload of cytology on pathologist. By conducting the one year certificate course for Cyrotechnician and Cyrotechnologist at BBCL we aim at producing efficient person in the field of cytopathology who can perform initial evaluation of cytology samples and reduce the workload of pathologist. He/She can also be of great value in early detection of cancers in the peripheral institutes including various screening programmes. The scope of the course includes collection and preparation of smears and distinction between different pathological conditions (including distinction between benign and malignant conditions) from respiratory tract, urinary tract, effusions (serous cavities) and female genital tract. Special emphasis will be given to cytology of female genital tract, particularly cytology of uterine cervix. It includes details knowledge of neoplastic and nonneoplastic lesions of cervix. The candidates will be taught to collect sample by fine needle aspiration. He / She will also be trained in quality control and laboratory organisation in cytology. There will be regular seminars and conferences.

### REGULATIONS

#### 1 (A) Admission Eligibility

B.Sc. (Biochemistry) or DMLT (2yrs) experience.

#### (B) Number of seats : 4 (four)

#### 2) Duration of the Course

The duration of the course shall be one year. The candidates admitted to this course would spend at least six hours a day and 30 hours per week at Dr. B.Borooah Cancer Institute.

#### 3) Medium of Instruction

English shall be the medium of instruction.

#### **4) ONE YEAR CERTIFICATE COURSE FOR CYTOTECHNOLOGIST**

##### **SYLLABUS**

###### **(i) Introduction to Cytology:**

Orientation to the profession of cytotechnology including basic cell biology, ethics, the microscope, history of the profession. Also basic concepts of pathology are introduced including normal, benign proliferative, inflammatory, and reparative processes. The cellular alterations caused by these processes are introduced using the female genital system. The histology, anatomy, and endocrine system of the female genital tract are also covered. Microscopy of this section includes proper use and care of the microscope, hormonal cytology, and the range of normal reparative reactions. The recognition of specific infectious agents and/or their cellular manifestations is also included using the female genital tract as the body system under investigation. Orientation, hormonal cytology, cytotechnology and the microscope, basic cell structure, anatomy, histology, normal cytology, and benign proliferative cytology, and inflammation and repair.

###### **(ii) Neoplasia in the Female Genital Tract:**

The pathologic concepts of neoplasia, the morphogenesis of carcinoma, and the cellular changes associated with both premalignant and malignant changes of squamous cell lesions in the cervix are studied. Microscopy in this section includes prescreening of clinical case load identifying normal and abnormal cellular criteria.

Dysplasia, CIS, and squamous cell carcinoma of the uterine cervix, Diseases of the uterine corpus, radiation effect, metastatic disease, pregnancy changes, and diseases of the vulva and vagina, review, and a comprehensive gynecological examination.

###### **(iii) Fundamentals of Analytical Techniques:**

This course will emphasize safety, analytical methods such as pipetting, quality control, spectrophotometry, curve analysis, and laboratory mathematics.

###### **(iv) Cytology Lab Management, Respiratory Cytology and Oral Cytology:**

Cytology lab regulations and QC requirements. Management requirements regarding safety, quality improvement, and personnel. Also, the normal, benign, and malignant changes of the upper and lower respiratory tract and the oral cavity. The anatomy, histology, and cytology of each of the body sites is studied as well as infectious agents common to these sites. Microscopy includes prescreening gynecologic material while further increasing speed and accuracy. Respiratory and oral specimens are also included in the practical microscopy. Benign and malignant respiratory, and oral cytology.

**(v) Effusions, CSF, and Miscellaneous Cytology:**

This course includes the cytology of the reticulo-endothelial system, effusions, CSF, and other miscellaneous fluids. Normal, benign, and malignant cellular findings are covered as well as the anatomy and histology of each body site. Microscopy includes further practice in gyn material and all non-gyn specimens studied to this point. Students continue to rotate through the processing laboratory reticuloendothelial system, effusions, CSF, synovial fluids, and eye cytology.

**(vi) Gastrointestinal, Breast, GU, and FNA Cytology:**

This course includes the cytology of the GI system, the breast, the urinary tract, and other miscellaneous body sites. The anatomy and histology of each of the body sites is studied; cellular criteria for benign, normal, and malignant changes are introduced. Advanced topics such as aspiration cytology will also be covered. Microscopy includes further practice in the pre-screening of gyn material as well as all non-gyn material studied to this point. Students continue to rotate through the processing laboratory. GI, breast, Urine, and FNA cytology as well as the non-gyn review and comprehensive examination.

**(vii) Scientific Method and Literature in Cytology:**

This course will focus on the scientific method and research tools as used in recent journal articles. Discussion will specifically focus on critical evaluation of the conclusions presented and the evidence used to support those conclusions. Also, data retrieval will be practiced as the students research and write a paper on a cytology related topic.

**(viii) Advanced Practical in Cytology:**

Microscopy includes further practice in the screening of all gyn and non-gyn material at professional entry levels of speed and accuracy. Students continue to rotate through the processing laboratory and participate in case conference.

**(ix) Advanced Topics in Cytology :**

This course will include advanced topics in cytology. Units include guest lectures. A Comprehensive final examination completes the course.

**5) Practical Training**

Being practical oriented programme the focus will be more practical training. The candidate shall undergo a practical training in the various departments of Dr. B. Borooah Cancer Institute, Guwahati.

6) **Award of Certificate**

A candidate will be awarded a Certificate by the Srimanta Sankardeva University of Health Sciences, Assam after successful completion of the course.

7) **Revision of regulations and syllabus**

The syllabus and regulations of the course are subject to modification by the concerned Institute once in three years.

**Cytopathology Books**

1. Fine Needle Aspiration Cytology by Svante R. Orell
2. Comprehensive Cytopathology by M. Bibbo and D. Wilbor
3. Atlas of Urinary Cytopathology with Histopathologic correlation by Syed Ali
4. Diagnostic Cytopathology by Winifred Gray
5. Diagnostic Cytology by Leopold G. Koss and Myron R. Melamed
6. Atlas of Non Gynaecologic Cytopathology by Grace T. McKee
7. The Bethesda System for reporting Cervical Cytology by D. Solomon & R. Nayar

**Practicals to be completed**

1. Hematology laboratory
2. Biochemistry Laboratory
3. Histopathology Laboratory
4. Cytopathology Laboratory
5. Blood banking

**List of Faculties :**

1. Dr. J. D. Sharma, M.D. – Chief Consultant & Head, Pathology Dept. , BBCI
2. Dr. A. Sarma, M.D. - Consultant, Pathology Dept. , BBCI
3. Dr. A. Bhuyan, M.D.- Consultant, Pathology Dept. , BBCI
4. Dr. P. Hazarika, M.D.- Consultant , Pathology Dept. , BBCI

**Visiting Faculties :**

1. Dr. U. C. Dutta, M.D., Professor & Head, Dept. of Pathology, GMCH
  2. Dr. Majula Choudhury, M.D., Assoc. Professor, Dept. of Pathology, GMCH
  3. Dr. (Mrs.) Muktanjalee Deka, M.D., Assoc. Professor, Dept. of Pathology, GMCH
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