

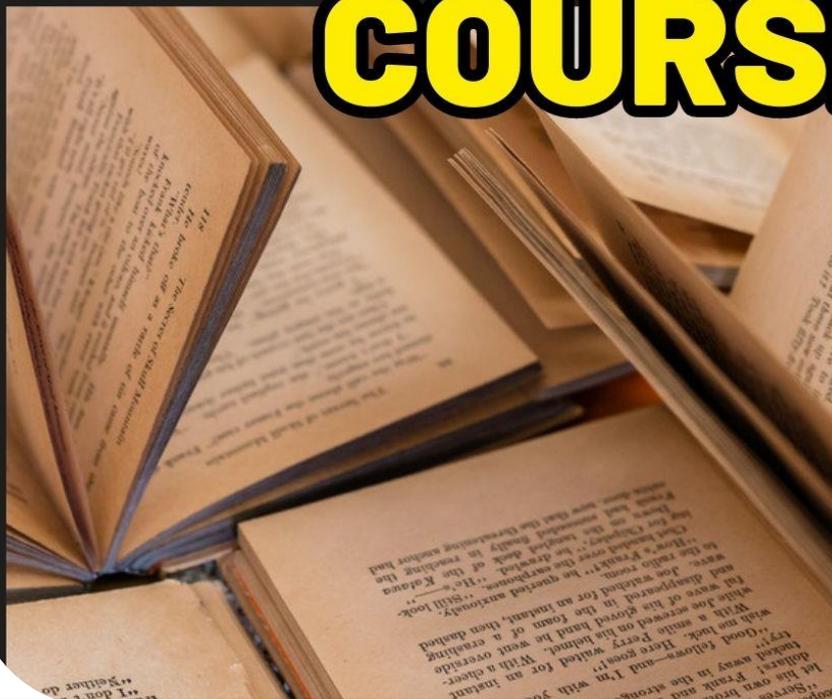


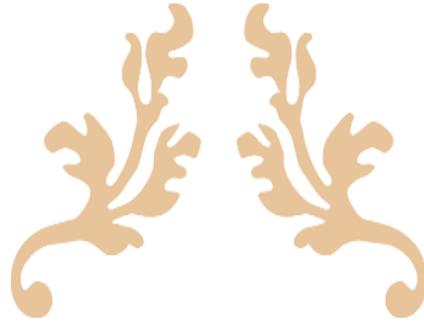
# SHRI GURU RAM RAI UNIVERSITY DEHRADUN



## VALUE ADDED COURSES

**SGRRU**





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# **SGRR UNIVERSITY**

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**Brochure of Value-Added Courses**  
**SGRRIMHS School of Paramedical**  
**Sciences**  
**2019-2020**



## ABOUT THE UNIVERSITY

Shri Guru Ram Rai University was established by a religious and philanthropic leader, Shri Mahant Devendra Dass Ji Maharaj in the year 2017. It is situated in the heart of city, Uttarakhand. We are extremely privileged to extend the values and ethos of the Shri Guru Ram Rai Education mission through SGRR University to impart quality education and in successfully placing more than 80% students in various companies across the globe. SGRR University has humongous campus spread over 80 acres of land. Its state-of-art facilities give opportunities to develop leadership skills and to achieve professional excellence. It has 5500+ students from different countries, 29 states and Union Territories and providing cultural melange and global exposure to our students. One of the biggest boosts from University is its unmatched experience of delivering quality education that helps to develop confidence and will give you more knowledge, industry exposure, building good networking and high self-esteem. This will change your overall personality and develop you into a complete professional to face any challenge.

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## INTRODUCTION

Traditional education provides a strong foundation, but to stay competitive and relevant, individuals must continually enhance their skill set. Enter value-added courses, a gateway to a world of specialized expertise designed to complement and enrich existing knowledge.

Value-added courses go beyond the conventional academic curriculum, offering practical insights and hands-on experience in niche areas. These courses are meticulously crafted to bridge the gap between theoretical learning and real-world application, empowering individuals to navigate the complexities of contemporary professional landscapes.

### **Conduction of value added courses :**

Value Added Course is not mandatory to qualify for any programme and the credits earned through the Value-Added Courses shall be over and above the total credit requirement prescribed in the curriculum for the award of the degree. It is a teacher assisted learning course open to all students without any additional fee.

Classes for a VAC are conducted during the RESERVED Time Slot in a week or beyond the regular class hours. The value-added courses may be also conducted during weekends / vacation period. A student will be permitted to register only one Value Added Course in a Semester.

student will be encouraged to opt for the VAC offered by his/her parent Department/Faculty. Industry Experts / Eminent Academicians from other Institutes are eligible to offer the value-added course. The course can be offered only if there are at least 5 students opting for it. The students may be allowed to take value added courses offered by other departments after obtaining permission from Dean offering the course. The duration of value added course is 30 hours with a combination 18 hours (60%) of theory and 12 hours (40%) of practical. However, the combination of theory and practical shall be decided by the course teacher with the approval of the Dean

### **Guidelines for conducting value added courses**

- ❖ Value Added Course is not mandatory to qualify for any program.
- ❖ It is a instructor supported learning course open to all students without any added fee.

- ❖ Classes for VAC will be conducted during the **RESERVED** Time Slot in a week or beyond the regular class hours.
- ❖ The value-added courses may be also conducted during weekends / vacation period.
- ❖ A student will be permitted to register only one Value Added Course in a Semester.
- ❖ Students may be permitted to enrol in value-added courses offered by other departments/ Schools after obtaining permission from the Department's Head offering the course.

### **Duration and venue**

- ❖ The duration of value-added course should not be less than 30 hours.
- ❖ The Dean of the respective School shall provide class room/s based on the number of students/batches.
- ❖ VAC shall be conducted in the respective School itself.

### **Registration procedure**

The list of Value-Added Courses, along with the syllabus, will be available on the University Website. A student must register for a Value-Added Course offered during the semester by completing and submitting the registration form. The Department Head shall segregate according to the option chosen and send it to the Dean of the school offering the specific Value-Added Courses.

- Each faculty member in charge of a course is responsible for maintaining Attendance and Assessment Records for candidates who have registered for the course.
- The Record must include information about the students' attendance and Assignments, seminars, and other activities that were carried out.
- The record shall be signed by the Course Instructor and the Head of the Department at the end of the semester and kept in safe custody for future verification.

- Each student must have a minimum of 75% attendance in all courses for the semester in order to be eligible to take certificate.
- Attendance requirements may be relaxed by up to 10% for valid reasons such as illness, representing the University in extracurricular activities, and participation in NCC.
- The students who have successfully completed the Value Added Course shall be issued with a Certificate duly signed by the Authorized signatories.

## Advance Techniques in Oncopathology

Course Code: VAC2019-24

### Course Objective:

- To provide a comprehensive understanding of the basics of oncopathology.
- To understand the structure and function of DNA and RNA in the context of cancer.
- To learn about human genetics and chromosome nomenclature relevant to cancer.
- To gain hands-on experience with advanced diagnostic techniques like PCR and gel electrophoresis.

### Course Outcomes:

- Comprehensive understanding of the principles and practices of oncopathology.
- Knowledge of DNA and RNA structures and their roles in gene expression and mutation in cancer.
- Familiarity with the basics of human genetics and its application in oncopathology.
- Proficiency in using advanced diagnostic techniques such as PCR and gel electrophoresis.

### Course Content:

#### Module 1: Foundations of Oncopathology

Introduction to Oncopathology, General Principles in the Practice of Oncopathology, Structure of DNA and RNA, Gene Expression, Mutation.

#### Module 2: Human Genetics in Oncopathology

Introduction to Human Genetics, Nomenclature of Human Chromosomes, Terminology and Classification of Chromosomes, Introduction to Advanced Techniques.

#### Module 3: Advanced Diagnostic Techniques

Polymerase Chain Reaction (PCR), Gel Electrophoresis.

### References:

- "Molecular Biology of Cancer: Mechanisms, Targets, and Therapeutics" by Lauren Pecorino.

- "Diagnostic Molecular Pathology" by William B. Coleman and Gregory J. Tsongalis.
- "Genetics in Medicine" by Thompson & Thompson.
- "PCR Protocols: A Guide to Methods and Applications" by Michael A. Innis et al.
- "Principles of Gene Manipulation and Genomics" by Sandy B. Primrose and Richard Twyman.

## Clinical Psychology

Course Code: VAC2019-25

### Course Objectives:

- The Clinical Psychology Doctoral Program trains psychologists to use scientific methods
- and evidence to inform the assessment, understanding, treatment and prevention of
- human problems in behavior, affect, cognition or health.

### Course Outcome:

- It is designed to provide students with the knowledge of the Psychology of the people.
- In this course, the student will learn the about the Personality, Personality Disorders and defence mechanisms.
- Understand the Aims and principles of Counselling.

### Module I :

- Introduction to Psychology and Learning and motivational theories. Introduction to Psychology, Fields of application of Psychology, influence of heredity and environment on the individual. Learning – theories and principles of learning, Learning disabilities.
- Memory – types, theories of memory and forgetting, methods to improve memory.
- Thinking – process of thinking, problem solving, decision making and creative thinking.
- Motivation - theories and types of Motivation.

### Module II:

- Theories of emotions and personality, Conflict and frustration
- Emotions - theories of emotions and stress, Emotional and behavioral disorders of childhood and adolescence, Disorders of under and over controlled behaviour, eating disorders.
- Attitudes – theories, attitudes and behavior, factors in attitude change.
- Intelligence - theories of intelligence, I.Q., general intelligence and special intelligence, intelligence tests and their uses.
- Personality, theories of personality, factors influencing personality, Personality Disorders.

- Conflict and frustration - Common defensive mechanism: Identification, regression, repression, projection, sublimation and rationalization.

### **Module III:**

- Aims and principles of Counseling. Psychotherapy
- Attention and Perception: Nature of attention, factors determining attention, nature of perception, principle of perceptual grouping; illusions and Hallucination.
- Counselling - Aims and principles, Development and growth of behavior in infancy and childhood, adolescence, adulthood and old age, normal and abnormal.
- Psychotherapy – introduction to paradigms in psychopathology and therapy  
Mental deficiency - Mental retardation, Autistic behavior Learning disabilities.

### **REFERENCES:**

1. Textbook of psychology by Rajiv Khanna
2. Morgan et al (2003). Introduction to Psychology. New Delhi: Tata McGraw hill

## Advanced Techniques in Clinical Microbiology

Course Code: VAC2019-26

### Course Objective:

Clinical microbiology focuses on the isolation and characterization of infectious organisms so they can be managed and treated in patients. Infections can be caused by bacteria, fungi, viruses, and parasites. To study microbial growth and different biochemical pathways used for the same. Course level learning outcomes: 1. Students will study about the growth of different types of microorganisms based on various environmental factors.

### Course Outcome:

- Understand laboratory safety methods.
- To define Skilled in handling clinical specimens for microbiological analysis.
- To interpret knowledge about automated techniques in Clinical microbiological techniques.

### Course Contents

**Module I :** Laboratory Safety: Organization of laboratory and safety precautions in clinical laboratory – Personal hygiene and care – General health care – Vaccination Schedule for technicians – Laboratory care and cautions – Do's and Dont's – lab accidents – Cuts and wounds – Fire Accidents

**Module II :** Clinical Sample Analysis: Sample collection, processing, preservation and transportation of samples Microscopic Analysis Microscopic analysis of clinical specimens – Urine, Stool, Sputum, Pus, Blood, CSF and other body fluids. Culture methods: Culturing and isolation of pathogens from clinical specimens. Culture media – General purpose media – special media – selective media – differential media – transport media.

**Module III : Advanced Techniques & Automation:** ELISA – PCR, Fluorescence Microscopy – Automated culture systems – automated Blood culture – Automated Urine culture – Automated Antibiotic Sensitivity testing.

### References :

1. Ananthanarayanan.R. and Paniker C.K.J Text Book of Microbiology, 9th Edition Orient Longman, (2013).
2. James cappuccino, Natalie Sherman. (2004) Microbiology: A Laboratory manual.
3. Ochei. J and A. Kolhatkar, 2000. Medical laboratory science: Theory and Practice, McGraw Hill Education.
4. Sood Ramnik. 2009. Medical Laboratory Technology: Methods and Interpretations. Jaypee Brothers, Medical Publishers Pvt. Limited.

5. Glick, B.J., Pasternak, J.J., Patten, C.L. 1994. Molecular Biotechnology: Principles and Applications of Recombinant DNA, 4th edition, ASM Press.

## Medical Genetics

Course Code: VAC2019-27

### Course Objective:

They will learn ethical principles as applied to genetic services and practice. genetic disease, order appropriate tests, interpret them for the patient, make a precise diagnosis and provide genetic counselling. medical genetics is usually interested in those types of pathologies: Monogenic diseases (inherited diseases, hereditary diseases, familiar diseases etc). Congenital malformations (birth defects, congenital anomalies, inborn errors of development). Chromosomal aberrations (including chromosomal syndromes).

### Course Outcome:

- Introduction to the structure and developmental expression of Haemoglobin synthesis, control and disorders
- To study the relationship between genetics and environmental factors and associated cancer, counselling and drug therapy.
- To spread awareness about the genetic susceptibility, its approaches and Disease model.

### Course Contents

#### Module I : Hemoglobin and the Hemoglobinopathies:

Structure and Developmental Expression of Hemoglobin. Synthesis and Control of Hemoglobin Expression. Disorders of Hemoglobin – alpha, beta and gamma. Clinical Variation of the Hemoglobinopathies. Antenatal and Newborn Hemoglobinopathy Screening.

#### Module II : Cancer Genetics:

Differentiation between Genetics and Environmental. Factors in Cancer. Oncogenes: Tumor Suppressor Genes, Epigenetics and Cancer, Genetics of Common Cancers. Genetic Counseling in Familial Cancer. Tumor profiling in cancer and identifying targets for drug therapy

#### Module III : Genetic Factors in Common Diseases:

Genetic Susceptibility to Common Disease, Approaches for Demonstrating Genetic Susceptibility to Common Diseases. Disease Models for Multifactorial Inheritance. Diabetes, Hypertension, Coronary Artery Disease, Alzheimer Disease, Age-Related Macular Degeneration

## REFERENCES:

- Alberts B, Johnson A, Lewis J, Morgan D, Roberts K, Walter P. Molecular Biology of the Cell. 6th ed. 2014. Garland.
- Blau N, Duran M, Gibson KM (Eds). Laboratory Guide to the Methods in Biochemical Genetics. 2008. Springer Online (accessed November 2012). ISBN 9783540766988.
- Harper P: Practical Genetic Counselling, (7th edition 2010). Oxford University Press.
- Jones KL and Smith DW: Smith's Recognizable patterns of Human malformations (7th Edition, 2013): Elsevier Health Sciences.
- Jorde LB, Carey JC and Bamshed MJ: Medical Genetics (4th Edition, 2010): Elsevier Health Sciences.
- Krebs JE, Goldstein ES, Kilpatrick ST. Lewin's Genes 11 ed. Jones and Bartlett. 2012.