

## First Year MBBS

### Integrated Undergraduate Research Curriculum

#### Theoretical Component (4 LGIS)

Theoretical component will be covered through **large group interactive sessions**

#### **Learning Objectives**

**LGIS1: Introduction to Health Research (HR) & Health Research Methods (HRM)- an overview** (what & why and how research)

At the end of the session, participants would be able to;

1. Define Health Research (HR) & Concept of Health research methods(HRM).
2. Understand background and value of research in health & human development
3. Elaborate Fundamental types and fields of health research covering;
  - a. Basic & Applied Research
  - b. Quantitative & Qualitative Research
  - c. Collaborative & Multidisciplinary research
  - d. Health Research triangle
4. Conceptualize the drivers of research including;
  - a. Curiosity
  - b. Health needs
  - c. Opportunity Profit
5. Appreciate role of HR in healthcare practices and human development

**LGIS 2: Characteristics of research process and researcher**

1. Explain research cycle
2. Explain meanings of various characteristics of health research process
3. Elaborate ingredients of researcher
4. Appreciate the importance of commands in certain pre-requisite subjects & skills before undertaking a research study.

**LGIS 3: Characteristics of Health research**

- Explain definition of Health Research Method.
- Explain ways of earlier thinking for a research area or topic
- Conceptualize different types of variables
- Differentiate between qualitative and quantitative data

**LGIS 4:**

1. Explain basic ethical principles of health research
2. Elaborate of five basic principles of Ethics in responsible conduct of research

# Practical Components of IUGRC-1<sup>st</sup> Year MBBS

## Practical Component-I

### Training of trainers

**Resource & Responsibility:** Faculty of Community Medicine RMU

**Recipients of training:** Nominated faculties of basic science departments

#### LOs:

At the end of the session, participants would be able to.

1. Comprehend their role in under “theme and scheme” of IUGRC-1<sup>st</sup> Year Practical component
2. Understand the techniques used to access, retrieve, and review and source of Scientific literature on the given topics (on selected topics for “updated evidence in Health” (UEIH) for poster development.
3. Make search string and perform literature search using Boolean operators
4. Access scientific databases and carry out an effective literature review using a number of sources or databases (PubMed)
5. Access HEC Digital library / PERN network use
6. Understand EBM Cycle & its 5 steps
7. How to configure & present a scientific poster / elements of a scientific poster
8. How to write References of the information cited
9. Learn overall posters’ work reporting guidelines

## Practical Component-II

### UEIH - Poster development Process

**Resource & Responsibility:** Trained Nominated Faculties of Basic Sciences department.

**Recipients of training:** small groups of first year MBBS medical students (2023)

#### Work brief:

- a. Small group-based contact sessions of 1<sup>st</sup> Year MBBS students for all work resulting in dedicated posters formation by each group. (according to theme & scheme of practical component of IUGRC-1<sup>st</sup> year)
- b. Nominated Faculties of respective Basic Sciences Dept. will conduct all practical sessions to accomplish the work.
- c. Major teachings / work will be done during physical contact sessions (1 in each Module) and for further in-between guidance, feedback & monitoring of work the digital LMS based or other e-group or Email communications forums may be created for the purpose.

## **Students Practical Session 1:** (placement in 1<sup>st</sup> Module) (work track & assessment by Log-Book)

**Resource & Responsibility:** Trained Nominated Faculties of Basic Sciences department.

**Recipients of training:** small groups of first year MBBS medical students (2023)

### **Session outline & LOs:**

In supervised session, at the end of the session, participants would be able to; **(Los)**

1. Comprehend the “theme and scheme” of IUGRC-1<sup>st</sup> Year Practical component.
2. Identify their individual role in Poster formation process according to steps of “updated evidence in Health” (UEIH) work.
3. Take leads for broader readings / literature review on boarder areas of UEIH
4. Make account on LMS, how to upload their individual assigned work.
5. Access HEC Digital Library , PERN access.
6. Group work learning protocols

## **Practical session 2:** (placement in 2nd Module) (work track & assessment by Log-Book)

**Resource & Responsibility:** Trained Nominated Faculties of Basic Sciences department.

**Recipients of training:** small groups of first year MBBS medical students (2023)

### **Session outline & LOs:**

In supervised session, after individual work sharing & supervised brainstorming (PAL) on ideas on broader areas UEIH-Poster formation, students will: **(session outlines or Los)**

1. Identify specific areas of work within the boarder area of study done after 1<sup>st</sup> Practical session.
2. Do earlier discussion on sub-topics to sub-groups on specific area or topic for UEIH for Poster formation.
3. Perform some literature search, retrieval & archiving for detailed study after the CS.
4. Do discussions on assigned work on individual or subgroup basis
  - Plan mutual sub-group work within group, for their better understanding, supervised by their relevant mentor.
5. Finalize the topic under supervision of supervisor (mentor) for UEIH for Poster formation.

## **Practical session 3:** (placement in 3<sup>rd</sup> Module) (work track & assessment by Log-Book)

**Resource & Responsibility:** Trained Nominated Faculties of Basic Sciences department.

**Recipients of training:** small groups of first year MBBS medical students (2023)

### **Session outline & LOs:**

In supervised session, after individual work sharing (PAL) on feedback and work assigned in last session (pr. session 2) on specific areas UEIH-Poster formation, students will be educated more on retrial and review of focused scientific information and extracting the relevant material for Posters :

**(Los):** after this students will be able to

- Present the individual work assigned before whole group.
- Understand more, the techniques used to access, retrieve and review and source of Scientific literature
- Make search string and perform literature search using Boolean operators

- Access scientific databases and carry out an effective literature review using a number of sources or databases (PubMed).
- Hold discussions
- Refine their work towards a UEIH-Poster formation

**Practical session 4:** (placement in 4<sup>th</sup> Module) (work track & assessment by Log-Book)

**Resource & Responsibility:** Trained Nominated Faculties of Basic Sciences department.

**Recipients of training:** small groups of first year MBBS medical students (2023)

**Session outline & LOs:**

In supervised session, after individual work sharing (PAL) on feedback and work assigned in last session (pr. session 3) on specific areas in UEIH-Poster formed. Students will be educated more on configuration of the UEIH – Poster and scientific reference writings. After this work the students will be able to:

- Assemble the scientific information in the form of UEIH- POSTER (uniform standard format with appropriate sources of information given on the poster-under guidelines).
- Present initial format of the UEIH-Poster
- Discuss / do critical review for further refinement & improvement in Poster.
- Draft references of the information used in the specific UEIH-Poster.

**Practical session 5:** (placement in 5<sup>th</sup> Module) (work track & assessment by Log-Book)

**Resource & Responsibility:** Trained Nominated Faculties of Basic Sciences department.

**Recipients of training:** small groups of first year MBBS medical students (2023)

**Session outline & LOs:**

In supervised session, after individual work sharing (PAL) on feedback and work assigned in last session (pr. session 4) on specific areas in UEIH-Poster formed. students will be educated more on configuration of the UEIH – Poster and **scientific reference writings**. Moreover, underlying areas of human health pertaining to topics of poster (clinical or basic science information) will also be discussed for relevant learning of the students. After this work the students will be able to:

1. Write the scientific references under some format
2. Explain the Underlying areas of human health pertaining to topic of their individual group poster (clinical or basic science) at their level.
3. Relate their clinical or basic poster relevant learning with their formal learning during 1<sup>st</sup> year MBBS.
4. Write the scientific references under some format
5. Explain the Underlying areas of human health pertaining to topic of their individual group poster (clinical or basic science) at their level.
6. Relate their clinical or basic poster relevant learning with their formal learning during 1<sup>st</sup> year MBBS.

**Practical session 6: wrap up session.** (placement in 6<sup>th</sup> Module) (work track & assessment by Log-Book)

**Resource & Responsibility:** Trained Nominated Faculties of Basic Sciences department.

**Recipients of training:** small groups of first year MBBS medical students (2023)

**Session outline & LOs:**

In supervised session, after individual work sharing (PAL) on feedback and work assigned in last session (pr. session 5) on specific areas in UEIH-Poster formed. students will be review the whole work done, and final draft of the poster will be finalized. After their session:

- Review of task done in session 5 (Bringing it altogether)
- Get approve within group under the mentor the final UEIH-Poster of the group.
- Preparation under supervision of respective mentor to Present work in Annual Research Day
- Students will present / compete for quality of their work in Annual Poster competition.
- Compilation of poster book of research work of the students

## **Second Year MBBS**

### **Descriptive Statistics Learning objectives**

At the end of the session, participants would be able to;

#### **Lecture 1: Introduction to Descriptive Statistics**

- Define & enlist uses of statistical knowledge in research & healthcare profession.
- Differentiate descriptive statistics from inferential statistics
- Appreciate value of information & precision in scientific decision making

#### **Lecture 2 : Classification of different types of Data**

- Describe the concept of data , variable & sources of data with respect to descriptive statistics
- Enlist data types with examples from medical background
- Classify types of data with examples (qualitative & quantitative)
- Exercise on the identification of different types of data

#### **Lecture 3: Scales of Data Measurement**

- Enlist types of data measurement scales
- Elaboration of different types of data measurement scales with example
- Enlist different method of data presentation (tables, graphs, diagrams, pie chart, Bar graph, histogram. line diagram scatter diagram, statistical maps, pictogram and ogive curve) according to type of data.

#### **Lecture 4: Measure of central tendency**

- Explain concept of Measures of central tendency with illustrations from medical background
- Calculate and interpret the different measures of central tendency

#### **Lecture 5: Measures of Dispersion**

- Explain concept of Measures of dispersion with illustrations from medical background
- Calculate and interpret the different measures of dispersion

#### **Lecture 6: Practice Session**

- Compute and Interpret results of different measures of dispersion from a given data file

- Compute and Interpret results of different measures of dispersion from a given data file

### **Training Session (Training of trainers)**

#### **Faculty of dept. of Community Medicine & Public Health will conduct training of trainers' sessions**

At the end of the session, participants would be able to

- How to generate a research question according to FINER Criteria
- Formulate the research question according to PICOT format – problem/population, intervention, comparison, outcome and time frame
- To understand how a properly formulated research question is related to an efficient literature review
- Orientation session on SPSS software
- Hands-on training session on descriptive analysis on SPSS

### **Practical Component**

**Resource & Responsibility:** Trained Nominated Faculties of Basic Sciences department

**Recipients of training:** small groups of second year MBBS medical students (2023)

#### **Practice Session 1**

- How to generate a research question according to FINER Criteria
- Formulate the research question according to PICOT format – problem/population, intervention, comparison, outcome and time frame
- To understand how a properly formulated research question is related to an efficient literature review
- Development of research protocol including research objectives

#### **Practice session 2**

- Orientation to SPSS software
- How to make variables

#### **Practice session 3**

- Data entry and coding in SPSS File

#### **Practice session 4**

- Data Analysis(Descriptive analysis ) according to research objectives

#### **Practice session 5**

- How to write a report /manuscript

## **Practice session 6**

- Finalization of Report writing
- Submission at SJRMC/any other medical journal