

# Tuning

India

## Reference Points for the Design and Delivery of Degree Programmes in Medicine

Shyamala Hande,  
Sudha Ramalingam (eds.)





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## **Reference Points for the Design and Delivery of Degree Programmes in Medicine**

Reference Points are non-prescriptive indicators and general recommendations that aim to support the design, delivery and articulation of degree programmes in Medicine. Subject area group including experts from India and Europe has developed this document in consultation with different stakeholders (academics, employers, students and graduates).

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# Preface

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India moves towards becoming a true knowledge society and because of the imminent fourth industrial revolution, the Higher Education System in India faces several challenges.

The three biggest challenges identified for Indian Higher Education for the upcoming years are those of expansion, excellence and equity. To make sure all the students who enrol in Higher Education institutions across the country benefit from comparable high-quality educational experience, Indian Higher Education needs to develop comparable and compatible degree programmes (curriculum development) and build the capacity of university teachers (enhancing the quality of education and teaching).

The National Education Policy-2020 (NEP-2020) is grounded on the principles of Access, Equity, Quality, Affordability and Accountability. The NEP-2020 provides a “new” and “forward-looking” vision for India’s HES and its quality. The policy emphasizes, among other, on:

- Enabling faculty and institutional autonomy;
- Revamping of curriculum, pedagogy, assessment and student support;
- Enabling increased access, equity, and inclusion through a range of measures, including greater opportunities for outstanding public education;
- Moving towards a more multidisciplinary undergraduate education.

In this backdrop, the NEP-2020 proposes to revise and revamp all aspects of the education structure, including its regulation and governance, to create a new system that is aligned with the aspirational goals of 21st-century education. The NEP-2020 recommends that all undergraduate and graduate programmes be developed on an underlying foundation of holistic education, which enhances the intellectual, social, ethical, analytical, and aesthetic capacities of all students.

According to the NEP-2020, teachers are at the heart of the learning process—their recruitment, continuous professional development, positive working environments and service conditions are an important aspect of quality and excellence in higher education. The policy further states that it is critical to empower the faculty with high competence and deep commitment to energize them for excellence in teaching and research. It recognizes that the most crucial factor for the success of higher education institutions is the quality and engagement of its faculty. Hence, the NEP-2020 makes critical interventions in reforming the current state-of-affairs to energize and engage faculty members towards excellence in teaching and research.

Modernisation of Indian Higher Education is also seen through equipping Indian Higher Education Institutions with procedures, tools, human resources and continuous professional development mechanisms necessary for Curriculum Internationalisation and creating institution-wide thriving cultures of internationalisation for all.

The motivation behind the Tuning India project comes from 2013, when the European Commission offered the University of Deusto the possibility to undertake a “Feasibility study into the relevance of a Tuning approach for Higher Education in India” within the broad cooperative relationship between India and the European Union. The Tuning India project builds on the recommendations formulated as an outcome of that 9-month study, which combined a policy documents analysis with interviewing key actors of Indian Higher Education: University Grants Commission, Indian Government Planning Commission, Association of Indian Universities, All India Council of Technical Education, Federation of Indian Chambers of Commerce and Industry (FICCI), National Assessment and Accreditation Council, as well as more than 25 of the most relevant universities from the five sub-regions of India. The target groups of the study were the policymakers, higher education authorities, university staff and students in India.

“Expansion”, “excellence” and “equity” is what Indian higher education strives for – every university student should have a high-quality educational experience, while every person dreaming of higher education should have the right to enter a university. The Tuning India project brings together 15 Indian universities, along with 5 European Union (EU) partners, to try and make this dream come true. Academics, students, graduates, employers and other relevant stakeholders from the five sub-regions of the country have been involved in the process of (re)designing degrees to make them learner-centred, comparable and compatible, as well as relevant for the society and the labour market.

The Tuning India project uses the “Tuning Methodology”, which has been successfully implemented in 130 countries since 2000. It is a university-driven project which aims to offer higher education institutions and subject areas a concrete approach to implementing competency-based and student-oriented approaches. Most importantly, Tuning has served as a forum for developing reference points at subject area level. These are relevant for making programmes of studies comparable, compatible and transparent.

According to Tuning, the change from a staff-centred approach to a student-oriented approach emphasises the fact that it is the students who have to be prepared to the greatest extent possible for their future roles in society. At this moment in the global process of reforms in higher education, it is experientially clear that it is not enough just to desire change, or even to programme it at the general level, but rather it is necessary to consider processes and tools at the institutional and degree programme level.

Tuning India has brought together a group of experts, highly qualified in their fields, from Indian reputed higher education institutions. It has provided a structured way for them to work together, both on issues regarding 4 subject areas (ICT, Law, Medicine and Teacher Education) and on aspects relevant to the entire area of higher education. Much of Tuning’s work focuses on the role of subject areas. This aspect of Tuning reflects the conviction that only those who have actual knowledge and experience in teaching, learning processes and research at an advanced level can create the framework for developing new programmes and guarantee their quality, in design and delivery, in the new global context.

Tuning India has provided a platform for developing understanding and insight into how this can be best accomplished. In a carefully

organised process of dialogue and debate, all the universities involved have reached deeper levels of understanding regarding the elements which constitute the essence of degree programmes in a national and international setting. Both common and diverse elements have been identified and formulated in wording which is commonly understood. For the last twenty years, Tuning has proved to be an effective way of reaching international consensus while respecting – and indeed positively implementing – the rich diversity of educational traditions and the specific experience and insight of different subject areas.

In the course of its operation, the Tuning India project has developed a common language and conceptual framework. Thus, it favours dialogue between different academic traditions and facilitates mutual understanding and transparency between universities and the broader community of stakeholders – i.e. ultimately society at large. It has stimulated a process of reflection, development and innovation in higher education programmes. All of this has constituted an intense and demanding, but ultimately useful and rewarding, learning process for all those involved. The Tuning India project empowered those who are directly responsible for the design and implementation of curricula. The hands-on experience gave them the know-how and confidence to roll it out to their colleagues in other degree programmes.

The four subject area groups in Tuning India (ICT, Law, Medicine and Teacher Education), developed final documents following a similar procedure to obtain their results. Through discussion, creation of reciprocal knowledge and mapping the ways the discipline is learned and taught in the various countries, insight was gained and consensus built on what constitutes the vital core of each subject area.

This book reflects the outcomes of the work done by Medicine in the Tuning India project and shows in synthesis the consensus reached after intense, prolonged and lively discussions. The outcomes are presented in the standard Tuning format, introducing the methodology developed to design and to deliver degree programmes on the basis of well identified profiles and how this can be expressed in competencies and translated into learning outcomes. In general terms, we may consider that Tuning India developed reference points for the design and implementation of degree programmes in India.

In the carrying out of the Tuning India project, the collaboration of numerous academics and administrative staff from India and EU

Member States has been essential. A remarkable degree of talent, expertise, generosity, loyalty and commitment has distinguished the Tuning India project. We owe great gratitude to all the academics involved directly and indirectly in the elaboration process. They have shown tremendous commitment and imagination, finding new solutions and ways forward in an open and constructive dialogue. They have shown that Indian academics have the calibre and the vision necessary to tackle vital issues at an international level. Today's global society requires this kind of vision and commitment.

This project would never have been possible without the dedication and wisdom of the Subject Area Coordinators. They have been the pillars of the project, not only carrying great responsibility but also channelling discussions and debate in a constructive and stimulating manner. They have shown their ability to build consensus and reach outcomes which will prove useful for Indian Higher Education institutions in general.

We express our sincere gratitude to all participating universities who through their academic and administrative staff have offered us their time, energy and support to help meet our goals, piloting a concrete Tuning experience.

We would like to thank the European Commission, which through its Erasmus+ Programme has offered us the support that has made this project possible.

We also thank the European colleagues, who have greatly enriched the project, both with their wealth of knowledge and insight, and new questions and ideas.

This project means dreaming – imagining ways in which current practices can be transformed and improved. But it means not only dreaming of this future, but of getting down to the work of making it a reality. The consortium as a whole has demonstrated admirable integrity through its involvement and commitment working with determination in a disadvantaged situation during a historical moment of suffering at the international level, proving to be an example not only for the world of higher education but also for the entire society.

We would also like to highlight the important contribution made at each Policy Forum and plenary session by the people who spoke about their experiences enriching the discussions.

Finally, we would like to acknowledge the work of the project management team and the steering committee, whose devotion contributed to keep alive the activity, allowing the project to be completed on time and within budget. Whose enthusiasm kept teams motivated and on track, and whose dedication ensured that the project obtained the best possible result.

We hope and believe that the material contained in this publication will be very useful for all higher education institutions wishing to implement a competence-based and student-oriented approach, and that it will help them find and use the most suitable tools for adapting or creating higher education programmes to respond to the needs of today's society.

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# 1

## Introduction

The 12<sup>th</sup> Five year plan had recognised the need to improve the overall quality of the Higher education in India through - expansion, equity and excellence. To ensure comparability and quality among all the students across the country who enroll in Higher Education institutions, Indian system needs to develop comparable and compatible degree programmes and focus on faculty development. High-quality learner-centred degree programmes, which are comparable and compatible across the different institutions at the national (as well as international) level and that permit students to develop transferable skills is the need of the hour.

The Tuning Approach is a process of curricular reforms and modernisation, originated in University of Duesto in the year 2000. It is a culturally adaptable and collaborative process involving all the important stakeholders in the curricular reforms. The approach aims to modify the existing degree programmes or create new degree programmes taking into consideration the learning outcomes related to employment and reappraisal of teaching, learning and assessment of transversal skills. It also emphasizes on quality assurance and quality enhancement processes to support continual improvement. Tuning approach has been developed and refined over the last 17 years helping higher education institutions over the world to find solutions viable for their contexts. This has been applied in Latin America, USA, EU, Russia, Africa and Asia.

The Tuning India project aims to institutionalise the use of the Tuning methodology in the practice of higher education institutions in India and to develop reference points in the four subject areas-

Law, ICT, Teacher Education and Medicine. The goal of the project is to contribute to and support the internationalization process in India through building of a framework of comparable, compatible and transparent degree programmes. Tuning India aimed to achieve this goal by a) applying Tuning methodology in Indian universities in four subject areas – Law, ICT, Medicine and Teacher Education; b) Developing Tuning Meta-Profiles in four subject areas c) Developing, implementing, monitoring and improving degree programmes; and d) Promoting sub regional and international cooperation between India and EU universities.

The Tuning India Subject Area Group Medicine (SAG) comprised of the following universities; University of Bologna, University of Groningen, Datta Meghe Institute of Medical Sciences, GD Goenka University, King George’s Medical University, Manipal Academy of Higher Education, M.S. Ramaiah Medical College PSG Institute of Medical Sciences and Research.

## University of Bologna

The University of Bologna was founded in 1088 and is considered to be the oldest university in Western Europe. Nowadays, it still remains one of the most important higher education institution across Europe with around 85,000 enrolled students, 11 Schools, 33 research departments, 6000 employees. The University of Bologna is among the most internationalised Italian universities.

Regularly enrolled foreign students are around 6000, while another 2000 arrives every year on international mobility programmes such as Erasmus+ and Overseas. The number of outgoing students on study grants is more than 2,000 per year. The academic offer is composed of around 200 Bachelor and MA programmes (40 of which are joint programmes and 36 of which are completely taught in English) and around 40 Doctoral Programmes.

UNIBO is traditionally fostering the institutional participation in EU programmes, networks and initiatives on internationalization of higher education and development cooperation. Through the International Relations and Research Divisions, support is provided for participation in Erasmus+, Horizon 2020, EuropeAid and all the other main Eu funding schemes.

UNIBO participates actively in several international HEIs networks, Coimbra Group and Utrecht Network among others. Besides, in cooperation with European and extra-EU university partners and associations, UNIBO actively contributes to the international debate and innovation in internationalization of higher education.

The Department of Medical and Surgical Science of the UNIBO hosts since 2006 the Centre for International Health-CSI as an interdisciplinary education and research centre. The main fields of interest are global and collective health, health education and primary health care. CSI develops research and training activities at local, national and international level and promotes innovative cooperation frameworks, new policies development and health care organizational models. CSI has a long cooperation experience with Brazil and is one of the founder of the European-Brazilian Laboratory for Training, Research and Practices in Collective Health, an inter-institutional cooperation that aggregates several governmental agencies and universities within Brazil and Europe. CSI is also a member of the People's Health Movement, an international network for health promotion, and is co-founder of RIISG, Italian Network for the Teaching of Global Health.

UNIBO has increased its cooperation with India and has already carried out different mobility initiatives with Indian higher education institutions: since 2009 it has been partner in 2 EMII INDIA4EU project editions (I and II), ended in 2016. The project was managed by a Partnership of Universities including 8 Indian Universities and 9 European Universities and was coordinated by Politecnico di Torino (Italy). The project offered to students, researchers and staff from India the opportunity to study, do research or teach in Europe for periods of different duration. Europeans had the same opportunities in India.

UNIBO participates to the European Project EQUAL 'Enhancing quality, access and governance of undergraduate education in India' financed by DG EuropeAid. The project is aimed at developing technology-based systems and procedures to support better governance and management of student learning, increasing student participation and improving the management of learning achievement and assessment. These actions involve sharing information between India and the European Union on study curricula and content, pedagogical approaches and learning assessment strategies.

Besides Unibo is coordinator in the Erasmus+ KA107 International Credit Mobility Project with Jadavpur University.

## The University of Groningen

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The University of Groningen (1614) is a research university with a global outlook. Quality has had top priority for four hundred years: the University is in the top 100 of the most influential ranking lists. It holds currently 30,000 students and 5500 staff members from home and abroad. Talent is nurtured, enabling the University to bridge the gap between science and society. The University is committed to actively collaborating with the social partners, with a special focus on the research themes- Healthy Aging, Energy and Sustainable Society. It is distinguished by the close link the University has forged between research and teaching, a bond that does justice to their interdependence. Students from every continent prepare themselves in Groningen for their international career paths.

As an institution facilitating academic research and teaching, the University works at the forefront in its respective fields. The University undertakes its cooperative relationships on the basis of openness and equality. In these relationships, the University is socially involved, purposeful and creative. The University stimulates current debate on scientific, social and cultural issues and is clear and convincing in such debates. It houses the International Tuning Academy which results from the Tuning Educational Structures in the World projects launched in 2000. Tuning has drawn attention to the importance of involving all stakeholders, including employers and graduates, in the process of curriculum design and implementation.

The University is together with the University of Deusto, Bilbao, Spain, co-ordinator of the Tuning Educational Structures in the World projects and co-founder of the International Tuning Academy.

## Datta Meghe Institute of Medical Sciences

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**DattaMeghe Institute of Medical Sciences** was conferred Deemed University Status in the year 2005 with two faculties under its ambit namely Jawaharlal Nehru Medical College (Medical Sciences),

Sharad Pawar Dental College (Dental Sciences). The scope of the university was further broadened by incorporation of Mahatma Gandhi Ayurveda College, Shrimati Radhikabai Meghe Memorial College of Nursing and Ravi Nair College of Physiotherapy in the year 2009. DMIMS(DU) offers a distinctive experience that is grounded in maximising the potential of students and their future-readiness, and broad-based research excellence that enables beneficial translation. Its Goal is to provide Renowned for pioneering new models of education, the University is also highly regarded for the hallmark rigour and breadth of its academic programmes, innovative education, and experiential learning. The goals and objectives of the University are:

1. To provide for need based, learner, community and quality centric education in all such branches of learning as may be deemed appropriate from time to time, so as to enable a student to reap the fruits of tertiary education.
2. To institute Degrees, Diplomas, Fellowships, Certificates and other Academic distinctions on the basis of examinations and other permissible methods of evaluation.
3. To create higher intellectual capacities and abilities towards generation of Globally relevant trained health manpower.
4. To venture into innovations and evidence based modifications in various domains of educational process as a whole.
5. To provide for generation of new knowledge through interdisciplinary research relevant to the societal needs.
6. To create centers of excellence for research and development, and for dissemination of knowledge and its relevant application regionally, nationally and Globally.
7. To offer continuing educational programmes to update knowledge and skills and to generate and promote amongst the students, teachers and employees an awareness and understanding of the societal needs of the country and ready them for all such needs

8. To undertake innovations, extramural studies, extension programmes and outreach activities to cater and to contribute to the sustainable development of the society.
9. To provide need based consultancy to the relevant industries and public health organizations.
10. To ensure the faithful adherence to directions and/ or guidelines issued by the University Grants Commission and other Regulatory Statutory Bodies from time to time.
11. To undertake all such initiatives as may be necessary and desirable towards furtherance of the Objectives and Goals as are set from time to time.

## GD Goenka University

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The GD Goenka University (GDGU) was established with the vision to be an internationally recognized institution of higher learning through inclusive, innovative and value-based education & research, preparing socially responsible citizen. All programmes in GDGU has also been approved by Statutory Councils GD Goenka University strives to produce globally competent graduates through a) inter-disciplinary projects based learning with focus on innovation & research that improve employability b) flexible and distinctive pedagogy that leverage technology and instill notion of lifelong learning c) efficient systems and processes that enable all the faculty, staff and students to optimally realize their potential d) association with top ranked institutions and leading industries that facilitate exchange and scholars and joint research e) Inculcation of ethical principles and understanding of societal & environmental realities.

With unswerving focus on providing quality education, GD Goenka University has engaged the best and brightest faculty to guide students, engage their minds and raise their horizon. The University has the best of facilities, equipment including laboratories, dedicated video conference facilities, virtual learning facilities and fully equipped conference rooms. These are all designed to extract the best and most creative qualities from the students. The hardware is superbly backed up by able counsellors who can inspire students to express themselves. The University has approximately 200 students and 150 full time faculty members

## King George's Medical University

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KGMU was established in the year 1911, with the vision is to be an outstanding University of Medical Excellence in the world in education, research and patient care.

It aims to

- be one of the world's best providers of high quality teaching and excellence in education, through creativity, innovation in teaching, learning and evaluation.
- Generate outstanding leaders in health sciences by nurture professionalism and behavioural skills in medical professionals.
- Promote multi-disciplinary scientific biomedical research through inculcating scientific temperament among faculty and students through research oriented activities and incorporating medical ethics, moral values, team spirit, responsibilities and sense of integrity in medical faculty and students
- Provide compassionate, patient-centered care of the highest quality

## Manipal Academy of Higher Education

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Manipal Academy of Higher Education (MAHE), an Institution of Eminence, located in Manipal, Karnataka on the South-West coast of India in an environment-friendly campus. MAHE is regularly ranked among the top 10 higher education institutions of the country. The University has its off-campuses in Mangalore and Bangalore and off-shore campuses in Dubai and Malaysia. It is one of the pioneering education providers in the country with structured education system, 2500+ faculty members, state-of-the-art facilities and active international collaborations. Manipal University has 28 institutions and independent departments, offering over 300 programs.

The University has three medical colleges and the three together have around 4000+ undergraduate students and 800 residents. The Kasturba Medical College (KMC) Manipal that was established on 30 June 1953 as the first self-financing medical college in the private sector. Over the years, it has been consistently ranked amongst the top 10 medical colleges

in the country and has collaborations with national and international universities. The medical Education unit of the Kasturba Medical College is one of the earliest, established in 1985 and several doctors have been trained in teaching-learning methods and clinical skills. The Kasturba Medical College is recognised by the Medical Council of India, The general Medical Council of Great Britain, The Malaysian Medical Council and the Australian Medical Council.

## **M.S. Ramaiah Medical College**

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M.S. Ramaiah Medical College & Hospitals is a unit under a not-for-profit trust Gokula Education Foundation (Medical). It has 5 Health Science programs and 2 hospitals. All the health science program are recognized by the respective regulatory bodies, Government of Karnataka and are under Rajiv Gandhi University of Health Sciences(RGUHS). The medical College is 38 years old and among one of the older colleges in the region.

The motto of the Health Sciences program is to deliver health and education for the betterment of mankind". The Mission of the institute is serve society by imparting the best quality education to deserving, committed students and render them in the service of the Community.

The institute strives to Encourage Creativity, Openness in Communication, Respect for Individuals Total Customer satisfaction and Build Relationships. The campus has over 2000 students pursuing undergraduate, post graduate and PhD programs in various branches of health Sciences. Hospitals have around 1000 beds to cater to the health care needs of the Community.

## **PSG Institute of Medical Sciences and Research**

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PSG Institute of Medical Sciences and Research (PSGIMSR) was started in 1985, with a vision is to be the best in providing medical education of international standards and train committed health professionals. Affiliated to the Tamil Nadu Dr. MGR medical University, currently has an annual intake of 250 undergraduate medical students and 81 postgraduate students in 24 disciplines. The institution, apart from being listed in WHO Directory of World Medical Schools, has been granted recognition by National Medical Council of India, General Medical Council of UK and Sri Lankan Medical Council.

Medical Education Unit (MEU) of PSG IMSR has been functioning since 1988. It has a large pool of faculty trainers who have received special training in medical education from national and international training centers. MEU of PSG IMSR is also one of the five FAIMER Regional Institutes in the world. MEU of PSG IMSR has guided eighty education Innovation projects in more than 25 medical colleges in the region. The Institute was also a secretariat for the SEARAME office for 2 years and has hosted several National and International conferences in medical education.

Basic character-building modules aimed at imbibing human values and ethics mixed with high-quality academic programs mark the Institution. Students are encouraged to pursue research with a fair amount of exposure to research ethics. The Institution constantly strive to develop student-centered, interactive, self-learning educational modules in medical science and medical humanities.

The list of SAG Medicine members:

Vimala Ventakesh	King George's Medical University
Veena Nayak	Manipal Academy of Higher Education
Tripti Waghmare	Datta Meghe Institute of Medical Sciences
Sudha Ramalingam	PSG Institute of Medical Sciences and Research
Shyamala Hande	Manipal Academy of Higher Education
Shally Awasthi	King George's Medical University
Savita Ravindra	M.S. Ramaiah Medical College
Rohit Dutt	GD Goenka University
Nanda Kumar Bidare Satyanarayana Sastry	M.S. Ramaiah Medical College
Mangala Manohar Pai	Manipal Academy of Higher Education
Kerry Jane Rhoden	University of Bologna
G Sumitra	PSG Institute of Medical Sciences and Research
Archana Sudhir Khursade	Datta Meghe Institute of Medical Sciences
Anke Van Trignt	University of Groningen

This report is intended to describe the results of the Tuning India Project for the Subject Area Group in Medicine. The SAG medicine convened five times between 2018-2021. The first meeting was held at Bangalore, India in May 2018. In this the participants were introduced to the Tuning methodology. During the first meeting, the SAG-Medicine brainstormed to arrive at generic and specific competences for the Undergraduate Medicine Degree programme. Four groups of stakeholders were consulted the importance and achievements of these competences in the degree programme. Based on the results, a metaprofile was developed for the degree programme in the second meeting held at Bilbao, in November 2018. Academicians were consulted to compare the degree profile of the programme and the metaprofile developed by the team. In the third meeting at Jaipur (Mar, 2019), the gaps between the metaprofile and reality was identified. During the fourth meeting, the SAG Medicine evolved ways to bridge this gap. Student workload surveys were done in the participating institutions to estimate the student workload. The teams worked in their institution to redesign the degree programme to address the gaps identified and implement the revised degree programmes.

## 2

# Definition of generic competences - A thematic perspective

One of the broad objectives of the Tuning India project is to aid in the process of building a framework of comparable, compatible and transparent degree programmes to support the internationalization process in India. The first step towards this is to describe the programme competences. The term competence was defined by Frank et al as "The array of abilities (knowledge, skills, and attitudes) across multiple domains or aspects of performance in a certain context. Statements about competence require descriptive qualifiers to define the relevant abilities, context, and stage of training. Competence is multi-dimensional and dynamic. It changes with time, experience, and setting". In simple words it can be stated as the ability or skill need to be developed in the student during the degree programme. Each programme has a set of main competences that would enable the student to carry out the professional task. Competences of a degree programme could be categorised into generic and subject-specific competences.

- a) Generic competence refers to those competences that are transferable between subject areas. These competences help in developing effective and adaptable graduates for workplace. Some examples of generic competencies include team skills, leadership skills, life long learning skills, ethics and values, etc. In the context of Medicine it could be described as an attribute or non-clinical competency required of doctors for effective practice in modern health-care systems. The need to provide students with opportunities to formally teach and assess

generic skills in a range of discipline-specific contexts has also been recognized in Medical curriculum.

- b) Subject specific competence refers to those competences that are performed in specific subject area. These are exclusive to that subject area and prepare the graduates to discharge their duty as subject experts in their workplace.

The Tuning methodology has well defined steps. The first step is identifying the generic and subject specific competences by a collaborative approach. The subject experts from diverse fields derived a list of generic competences for higher education degree programmes by comparing and brainstorming over the generic competences of degree programs in each institute/ University.

The subject area group members of Medicine then worked in their groups to create an inventory of subject specific competences from National policies, regulatory requirements and Institution goals. These were then presented to the other SAG experts for discussion. Following this, the SAG medicine went into another round of discussion for fine tuning the specific competencies listed in their earlier discussion. These would later be refined to develop into a metaprofile for the specific degree programmes.

## The list of Generic competences identified was as follows:

1	Ability to do research
2	Adhere to ethical principles
3	Be socially responsible and humane
4	Ability to apply knowledge in practical situations
5	Ability to plan and manage time efficiently
6	Be a life-long learner
7	Acquire problem solving capacity
8	Ability to make reasoned decisions
9	Have good interpersonal skills
10	Appreciate and respect diversity and multiculturalism
11	Ability to manage crisis effectively
12	Act within the legal framework
13	Demonstrate environmental and economic consciousness
14	Ability to communicate effectively
15	Ability to work as a team
16	Demonstrate higher order thinking skills (analytical, critical, abstract, creative)
17	Be a reflective practitioner
18	Be innovative
19	Ability to work independently in a responsible manner
20	Possess self-confidence and entrepreneurial spirit
21	Be adaptable to emerging trends
22	Practice professionalism
23	Promote and ensure equal opportunities including gender issues
24	Adhere to and enhance quality standards
25	Demonstrate leadership qualities
26	Ability to use available resources optimally and efficiently
27	Ability to manage stress and maintain emotional stability
28	Have organizational and managerial skills
29	Be motivated for self-learning
30	Be goal-oriented

## List of Subject specific competences Undergraduate programme in Medicine was as follows:

1	Differentiate between normal and abnormal structure and function of the human body
2	Apply ethical and humanitarian principles that influence health care.
3	Apply medico-legal principles in health care practice.
4	Integrate health care policies and guidelines into the routine clinical practice
5	Cater to the health needs of rural, marginalized and differently-abled populations.
6	Recognize health needs of the community and practice community-based comprehensive health care.
7	Elicit, evaluate and interpret a patient's history and medical records.
8	Perform a relevant physical examination.
9	Choose and interpret appropriate diagnostic tests based on scientific validity, cost effectiveness and clinical context.
10	Critically appraise history, examination and diagnostic test findings for differential diagnosis and develop an individualized management plan.
11	Perform basic clinical procedures independently.
12	Maintain appropriate patient records within legal and administrative frame works.
13	Prescribe and safely administer appropriate therapies.
14	Identify and refer patients for specialized and/or advanced care.
15	Collaborate with health care professionals.
16	Collect, analyze and utilize health data.
17	Practice Evidence-Based Medicine.
18	Promote positive Health.
19	Communicate compassionately with patients and care givers.
20	Maintain confidentiality and privacy of patients.
21	Respect patient autonomy.
22	Contribute towards the growth of the medical profession.
23	Ensure and maintain patient safety.
24	Adopt Occupational Health safety practices.
25	Practice safe and sound biomedical waste management.
26	Recognize the need for palliative and rehabilitative services.
27	Recognize the role of traditional systems of medicine in health care.
28	Be sensitive to the issues of gender and equity in health care practice.

# 3

## Identification of specific competences

Presentation of the subject specific competences agreed in the group. Explanation of the process followed, to achieve the list of subject specific competences. Institutional/national/sub-regional/ references which SAG took into account to achieve the list of subject specific competences.

On 10<sup>th</sup> May 2018, medicine SAG met in Bilbao, Spain. There was a group discussion to identify generic as well as specific competencies of Medicine SAG. The list was presented before other SAGs and finalized.

Thereafter, each of the participating institution conducted an online survey of stakeholders to rate (importance and achievement) and rank individual competencies in the generic as well as specific group. The number of participants from each stakeholder group is given in Table 1 below:

### TUNING Survey- India 2018

**Table 1**  
Total number of respondents of specific and generic competences (Medicine)

	Academics	Employers	Students	Graduates	Total
Generic	174	169	209	169	721
Specific	135	139	209	169	652
<b>Total</b>	<b>309</b>	<b>308</b>	<b>418</b>	<b>338</b>	<b>1,373</b>

## Guidelines for interpretation of results

### Ratings

It refers to the means for each competence in the scale of 1 to 4. Each competence was rated in terms of *importance* and *achievement*, so there were two results for each competence. The first graphic display results, ordered from the most important to least important competence. Of course, the mean for *achievement* does not follow a descending pattern strictly, as the reference for this order was the mean for *importance*. It should be noted that the maximum value for the mean is 4 and the minimum is 1. The mean for *achievement* was normally lower than the mean for *importance*. This is of no surprise, as this is the case in all other previous TUNING studies (and most studies, using this double scale of “importance” and “achievement” show similar results). But of course, the gap between both means is relevant as it shows how far both means are. A wide gap between two competences is more relevant if the competence is rated as a highly important competence.

After the graphic, the same means are provided in a table where the competences have been ordered by the mean of the *importance* rating score (descending order) as it was done in the graphics before.

### Ranking

In the questionnaire, respondents chose the five most important competences. In order to analyse the results, the first chosen competence was assigned 5 points, the second one 4 points, the third one 3 points, the fourth 2 points and 1 point to the fifth and last one. The unchosen competences were assigned with zero points. Therefore, if all respondents would choose one given competence as the first one, the mean of this assigned score would yield a top 5 for the mean of this competence. In the same manner, a given competence which was never chosen by any of the respondents among the top five would yield a mean of zero. The graphic shows the competences in descending order by using this score.

After this graphic, the same results were given in the corresponding table, where competences were ordered in ascending order.

## Correlations

At the end of these results, correlations among the means given by groups have been calculated. This correlation coefficient measures the sign and intensity of the relationship between the means of the four groups considered in each result: importance, achievement and ranking. This most used coefficient has a minimum value of  $-1$  (maximum possible negative relationship) and a maximum value of  $+1$  (maximum possible positive relationship). A zero would indicate the absence of relationship between the results of any pair of given groups. As you may observe that all correlations were positive, as expected. Note that a negative correlation would indicate that two given groups are behaving in an opposite manner. A correlation close to 1 for two groups, let's say *Academics* and *Students* as an example, shows that the means obtained for the set of competences behave in a very similar manner. If this correlation refers to *Importance*, as an example again, it would mean that, when a competence is judged by *Academics* as very important, *Students* will consider this competence as very important too (that does not imply that the means are equal in both groups, but both means will be relatively high in each group). In the same manner, if a given competence is judged by *Academics* among the least important ones, *Students* will consider this competence as a competence of least importance (once again that does not imply that the means are equal in both groups, but both means will be relatively low in each group).

### *Comparing importance and achievement separately between groups*

Two final slides were included showing graphics for importance and achievement ratings separately with four groups altogether in each graphic. This graphics allows for comparison between different groups. The competences were ordered just as they were listed in the original questionnaire.

The results for specific competences were presented for every combination of Area/Group and separately for Ratings and Rankings as displayed in the corresponding labels on each slide. The results for generic competences were presented separately for each combination of Area/Group and for all areas together separated by groups.

## Specific competences (Medicine)

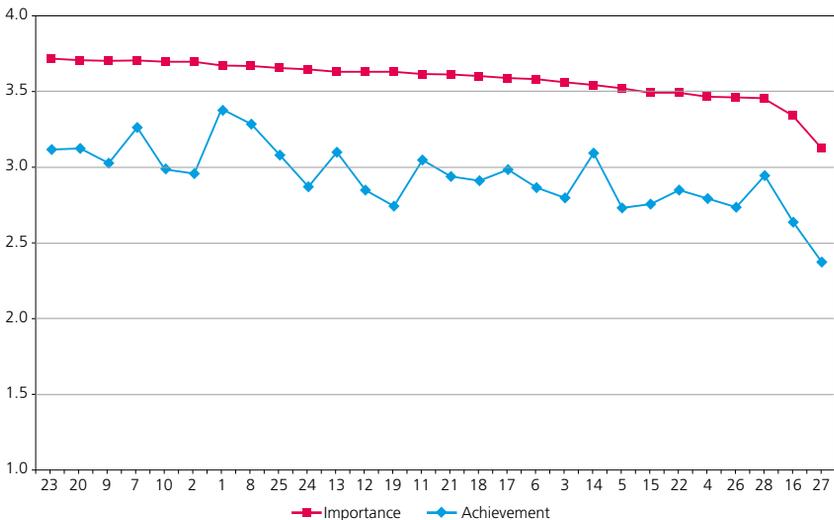
The SAG group have agreed upon 28 specific competencies which are given below as Table 2.

**Table 2**  
List of Specific Competencies of Medicine Group

Medical Graduate is expected to	
1	Differentiate between normal and abnormal structure and function of the human body.
2	Apply ethical and humanitarian principles that influence health care.
3	Apply medico-legal principles in health care practice.
4	Integrate various Health care policies and guidelines for health care.
5	Cater to the health needs of rural, marginalized and differently-abled population.
6	Recognize health needs of the community and practice community based comprehensive health care.
7	Elicit, evaluate and interpret patient's history and medical records.
8	Perform relevant physical examination.
9	Choose and interpret appropriate diagnostic tests based on scientific validity, cost effectiveness and clinical context.
10	Critically appraise history, examination and diagnostic test findings for differential diagnosis and develop an individualized management plan.
11	Perform basic clinical procedures independently.
12	Maintain appropriate record of patient within legal and administrative frame works.
13	Prescribe and safely administer appropriate therapies.
14	Identify and refer patients for specialized and/or advanced care.
15	Collaborate with health care professionals.
16	Collect, analyse and utilize health data.
17	Practice Evidence Based Medicine.
18	Promote positive Health.

19	Communicate compassionately with patients and care givers.
20	Maintain confidentiality and privacy of patients.
21	Respect patient autonomy.
22	Contribute towards the growth of medical profession.
23	Ensure and maintain patient safety.
24	Adopt Occupational Health safety practices.
25	Practice safe and sound biomedical waste management.
26	Recognize the need for palliative and rehabilitative services.
27	Recognize the role of traditional systems of medicine in health care.
28	Sensitive to the issues of gender and equity in health care practice.

Rating and ranking of specific competencies by the academics are given below in as Figure 1 and Table 3.



**Figure 1**  
Ratings of specific competencies by the academics

**Table 3**

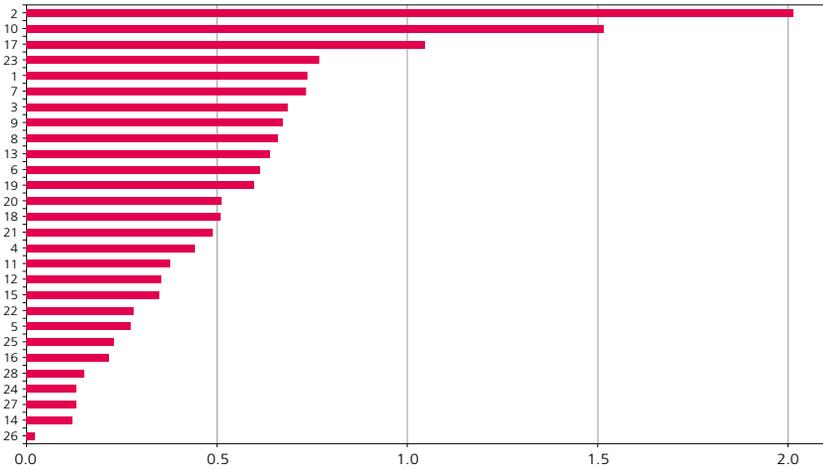
Rating of specific competencies of importance and achievement by academics

Medicine Academics Ratings			
#	Description	Importance	Achievement
23	Ensure and maintain patient safety	3.72	3.12
20	Maintain Confidentiality and privacy of patients	3.71	3.13
9	Choose and interpret appropriate diagnostic tests based on scientific validity, cost effectiveness (...)	3.71	3.03
7	Elicit, evaluate and interpret a patient's history and medical records	3.71	3.26
10	Critically appraise history, examination and diagnostic findings for differential diagnosis and (...)	3.70	2.99
2	Apply ethical and humanitarian principles that influence health care	3.70	2.96
1	Differentiate between normal and abnormal structure and function of the human body	3.69	3.38
8	Perform a relevant physical examination	3.67	3.29
25	Practice safe and sound biomedical waste management	3.66	3.08
24	Adopt Occupational Health safety practices	3.65	2.87
13	Prescribe and safely administer appropriate therapies	3.64	3.10
12	Maintain appropriate patient records within legal and administrative frame works	3.63	2.85
19	Communicate compassionately with patients and care givers	3.63	2.75
11	Perform basic clinical procedures independently	3.62	3.05
21	Respect patient autonomy	3.61	2.94
18	Promote positive health	3.61	2.91
17	Practice Evidence-Based Medicine	3.59	2.98
6	Recognize health needs of the community and practice community-based comprehensive health care	3.59	2.87

Medicine Academics Ratings			
#	Description	Importance	Achievement
3	Apply medico-legal principles in health care practice	3.57	2.80
14	Identify and refer patients for specialized and/or advanced care	3.55	3.10
5	Cater to the health needs of rural, marginalized and differently-abled populations	3.53	2.73
15	Collaborate with health care professionals	3.50	2.76
22	Contribute towards the growth of the medical profession	3.50	2.85
4	Integrate health care policies and guidelines into the routine clinical practice	3.47	2.79
26	Recognize the need for palliative and rehabilitative services	3.46	2.74
28	Be sensitive to the issues of gender and equity in health care practice	3.46	2.95
16	Collect, analyze and utilize health data	3.34	2.64
27	Recognize the role of traditional systems of medicine in health care	3.13	2.38

From figure 1 and table 3 of specific competencies by academics, there was disparity between importance and achievement.

Rating and ranking of specific competencies by the employers are given below



**Figure 2**

The above bar graph depicts the rankings of specific competencies by academics

**Table 4**

Ranking of specific competencies by academics

Medicine Academics Rankings		
#	Description	Ranking
26	Recognize the need for palliative and rehabilitative services	0.02
14	Identify and refer patients for specialized and/or advance care	0.12
27	Recognize the role of traditional systems of medicine in health care	0.13
24	Adopt Occupational Health safety practices	0.13
28	Be sensitive to the issues of gender and equity in health care practice	0.15
16	Collect, analyze and utilize health data	0.22
25	Practices safe and sound biomedical waste management	0.23

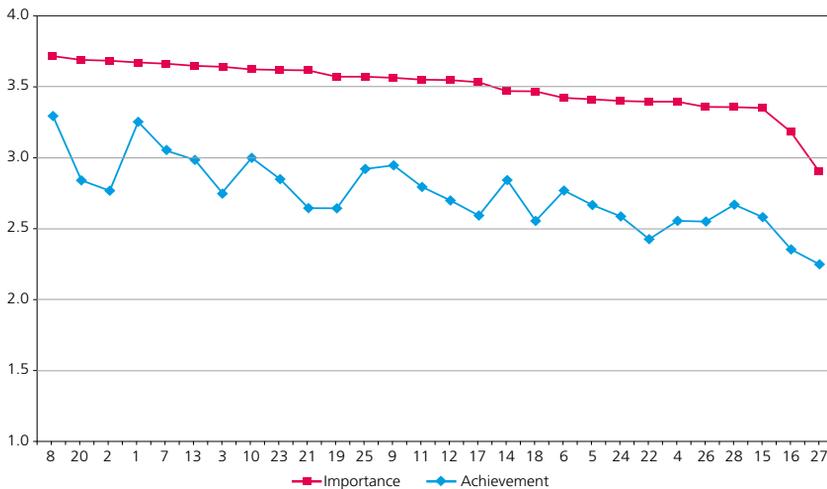
Medicine Academics Rankings		
#	Description	Ranking
5	Cater to the health needs of rural, marginalized and differently-abled populations	0.27
22	Contribute towards the growth of the medical profession	0.28
15	Collaborate with health care professionals	0.35
12	Maintain appropriate patients records within legal and administrative frame works	0.35
11	Perform basic clinical procedures independently	0.38
4	Integrate health care policies and guidelines into the routine clinical practice	0.44
21	Respect patient autonomy	0.49
20	Maintain confidentiality and privacy of patients	0.51
19	Communicate compassionately with patients and care givers	0.51
6	Recognize health needs of the community and practice community-based comprehensive health care	0.61
13	Prescribe and safely administer appropriate therapies	0.64
8	Perform a relevant physical examination	0.66
9	Choose and interpret appropriate diagnostic tests based on scientific validity, cost effectiveness (...)	0.67
3	Apply medico-legal principles in health care practice	0.69
7	Elicit, evaluate and interpret a patient's history and medical records	0.73
1	Differentiate between normal and abnormal structure and function of the human body	0.73
23	Ensure and maintain patient safety	0.77
17	Practice Evidence-Based medicine	1.05
10	Critically appraise history, examination and diagnostic test findings for differential diagnosis and (...)	1.51
2	Apply ethical and humanitarian principles that influence health care	2.01

## The top 5 ranking specific competencies by academics were:

- Rank 1: Apply ethical and humanitarian principles that influence health care (Competency 2)
- Rank 2: Critically appraise history, examination and diagnostic findings for differential diagnosis and (...) (Competency 10)
- Rank 3: Practice Evidence-Based Medicine (Competency 17)
- Rank 4: Ensure and maintain patient safety (Competency 23)
- Rank 5: Differentiate between normal and abnormal structure and function of the human body (Competency 1)

## SPECIFIC Competences – Employers

Rating and ranking of specific competencies by the employers are given below.



**Figure 3**  
Rating of specific competencies by employers

From figure 3, importance and achievement are closely related by competency 1 (Differentiate between normal and abnormal structure and function of the human body) which is meeting the criteria of correlation by its achievement greater than 3. However, competency 2 (Apply ethical and humanitarian principles that influence health care) is showing weak bond between importance and achievement, which needs to be strengthened.

**Table 5**

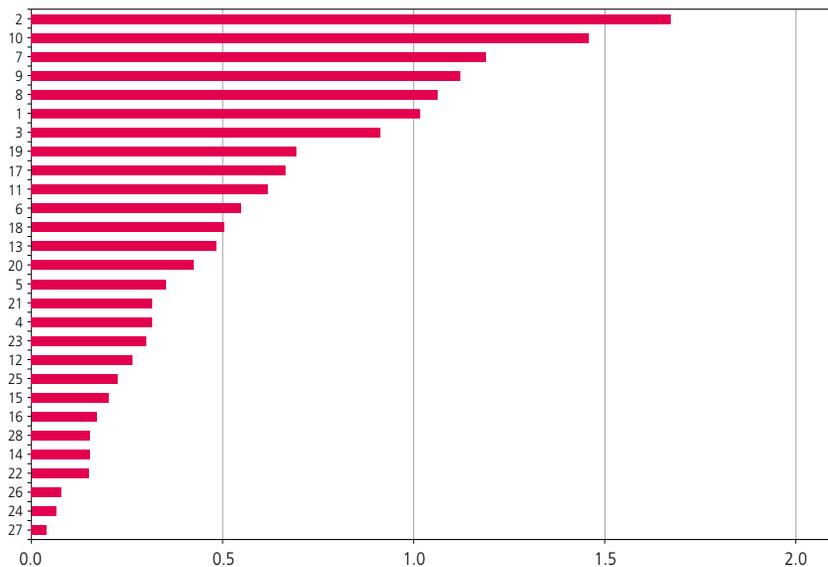
List of specific competencies of importance and achievement by employers

Medicine Employers Rating			
#	Description	Importance	Achievement
8	Perform a relevant physical examination	3.71	3.29
20	Maintain confidentiality and privacy of patients	3.68	2.84
2	Apply ethical and humanitarian principles that influence health care	3.68	2.76
1	Differentiate between normal and abnormal structure and function of the human body	3.67	3.25
7	Elicit, evaluate and interpret a patient's history and medical records	3.65	3.05
13	Prescribe and safely administer appropriate therapies	3.64	2.98
3	Apply medico-legal principles in health care practice	3.63	2.74
10	Critically appraise history, examination and diagnostic test findings for differential diagnosis and (...)	3.62	3.00
23	Ensure and maintain patient safety	3.61	2.85
21	Respect patient autonomy	3.61	2.64
19	Communicate compassionately with patients and care givers	3.57	2.64
25	Practice safe and sound biomedical waste management	3.56	2.91
9	Choose and interpret appropriate diagnostic tests based on scientific validity, cost effectiveness (...)	3.56	2.94

Medicine Employers Rating			
#	Description	Importance	Achievement
11	Perform basic clinical procedures independently	3.55	2.79
12	Maintain appropriate patient records within legal and administrative frame works	3.54	2.70
17	Practice Evidence-Based Medicine	3.52	2.59
14	Identify and refer patients for specialized and/or advanced care	3.47	2.84
18	Promote positive Health	3.46	2.55
6	Recognize health needs of the community and practice community-based comprehensive health care	3.42	2.77
5	Cater to the health needs of rural, marginalized and differently-abled populations	3.40	2.66
24	Adopt Occupational Health safety practices	3.40	2.58
22	Contribute towards the growth of the medical profession	3.39	2.42
4	Integrate health care policies and guidelines into the routine clinical practice	3.39	2.55
26	Recognize the need for palliative and rehabilitative services	3.35	2.54
28	Be sensitive to the issues of gender and equity in health care practice	3.35	2.67
15	Collaborate with health care professionals	3.35	2.58
16	Collect, analyze and utilize health data	3.18	2.35
27	Recognize the role of traditional systems of medicine in health care	2.90	2.24

For all the competencies, there was disparity between importance and achievement from figure 3 and table 5.

## Competencies by employers



**Figure 4**

The below bar graph shows the ranking of specific competencies by employers

**Table 6**

Ranking of specific competencies by employers

Medicine Employers Ranking		
#	Description	Ranking
27	Recognize the role of traditional systems of medicine in health care	0.04
24	Adopt Occupational Health safety practices	0.06
26	Recognize the need for palliative and rehabilitative services	0.08
22	Contribute towards the growth of the medical profession	0.15
14	Identify and refer patients for specialized and/or advanced care	0.15
28	Ba sensitive to the issues of gender and equity in health care practice	0.15
16	Collect, analyze and utilize health data	0.17

Medicine Employers Ranking		
#	Description	Ranking
15	Collaborate with health care professionals	0.20
25	Practice safe and sound biomedical waste management	0.23
12	Maintain appropriate patient records within legal and administrative frame works	0.27
23	Ensure and maintain patient safety	0.30
4	Integrate health care policies and guidelines into the routine clinical practice	0.32
21	Respect Patient autonomy	0.32
5	Cater to the health needs of rural, marginalized and differently-abled populations	0.35
20	Maintain confidentiality and privacy of patients	0.42
13	Maintain confidentiality and privacy of patients	0.48
18	Promote positive Health	0.50
6	Recognize health needs of the community and practice community-based comprehensive health care	0.55
11	Perform basic clinical procedures independently	0.62
17	Practice Evidence-Based Medicine	0.66
19	Communicate compassionately with patients and care givers	0.69
3	Apply medico-legal principals in health care practice	0.91
1	Differentiate between normal and abnormal structure and function of the human body	1.02
8	Perform a relevant physical examination	1.06
9	Choose and interpret appropriate diagnostic tests based on scientific validity, cost effectiveness (...)	1.12
7	Elicit, evaluate and interpret a patient's history and medical records	1.19
10	Critically appraise history, examination and diagnostic test findings for differential diagnosis and (...)	1.46
2	Apply ethical and humanitarian principles that influence health care	1.67

### The top 5 ranking specific competencies by employers were:

- Rank 1: Apply ethical and humanitarian principles that influence healthcare (Competency 2)
- Rank 2: Critically appraise history, examination and diagnostic test findings for differential diagnosis and (...) (Competency 10)
- Rank 3: Elicit, evaluate and interpret a patient's history and medical records. (Competency 7)
- Rank 4: Choose and interpret appropriate diagnostic tests based on scientific validity, cost effectiveness (...) (Competency 9)
- Rank 5: Perform a relevant physical examination. (Competency 8)

### Rating and ranking of specific competencies by the students

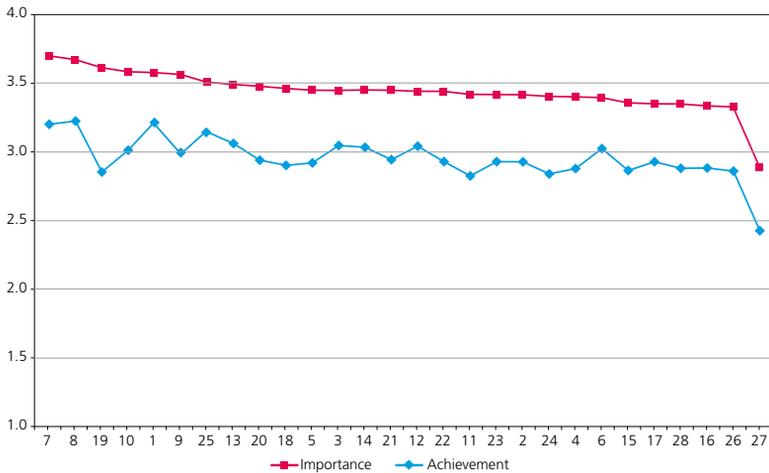


Figure 5

Rating of importance and achievement of specific competencies by students

Figure 5 depicts the relationship between importance and achievement which is nearest for competency 6 (Recognize health needs of the community and practice community-based comprehensive health care) and farthest for competency 19 (Communicate compassionately with patients and care givers).

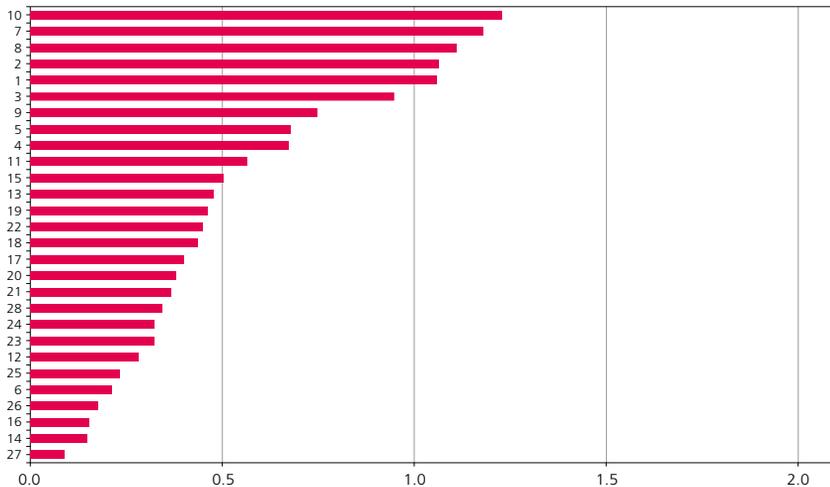
**Table 7**

Rating of importance and achievement by specific competencies by students

Students Rating			
#	Description	Importance	Achievement
7	Elicit, evaluate and interpret a patient's history and medical records	3.71	3.20
8	Perform a relevant physical examination	3.68	3.22
19	Communicate compassionately with patients and care givers	3.63	2.85
10	Critically appraise history, examination and diagnostic test findings for differential diagnosis and (...)	3.58	3.02
1	Differentiate between normal and abnormal structure and function of the human body	3.58	3.22
9	Choose and interpret appropriate diagnostic tests based on scientific validity, cost effectiveness (...)	3.57	3.00
25	Practice safe and sound biomedical waste management	3.51	3.14
13	Prescribe and safely administer appropriate therapies	3.50	3.06
20	Maintain confidentiality and privacy of patients	3.49	2.94
18	Promote positive Health	3.47	2.90
5	Cater to the health needs of rural, marginalized and differently-abled populations	3.46	2.92
3	Apply medico-legal principles in health care practice	3.46	3.05
14	Identify and refer patients for specialized and/or advanced care	3.46	3.03
21	Respect patient autonomy	3.46	2.95
12	Maintain appropriate patient records within legal and administrative frame works	3.45	3.04
22	Contribute towards the growth of the medical profession	3.44	2.93

Students Rating			
#	Description	Importance	Achievement
11	Perform basic clinical procedures independently	3.43	2.82
23	Ensure and maintain patient safety	3.42	2.93
2	Apply ethical and humanitarian principles that influence health care	3.42	2.93
24	Adopt Occupational Health safety practices	3.41	2.84
4	Integrate health care policies and guidelines into the routine clinical practice	3.41	2.88
6	Recognize health needs of the community and practice community-based comprehensive health care	3.40	3.02
15	Collaborate with health care professionals	3.37	2.86
17	Practice Evidence-Based Medicine	3.36	2.93
28	Be sensitive to the issues of gender and equity in health care practice	3.35	2.88
16	Collect, analyze and utilize health data	3.35	2.88
26	Recognize the need for palliative and rehabilitative services	3.34	2.87
27	Recognize the role of traditional systems of medicine in health care	2.89	2.43

For all the competencies, there was disparity between importance and achievement by figure 5 and table 7.



**Figure 6**

The below bar graph shows the ranking of specific competencies by students in descending order

**Table 8**

Ranking of specific competencies by students

Medicine Students Rankings		
#	Description	Ranking
27	Recognize the role of traditional systems of medicine in health care	0.09
14	Identify and refer patients for specialized and/or advance care	0.15
16	Collect, analyze and utilize health data	0.15
26	Recognize the need for palliative and rehabilitative services	0.18
6	Recognize health needs of the community and practice community-based comprehensive health care	0.21
25	Practice safe and sound biomedical waste management	0.23
12	Maintain appropriate patient records within legal and administrative frame works	0.28
23	Ensure and maintain patient safety	0.32
24	Adopt Occupational Health safety practices	0.32

Medicine Students Rankings		
#	Description	Ranking
28	Be sensitive to the issues of gender and equity in health care practice	0.34
21	Respect patient autonomy	0.37
20	Maintain confidentiality and privacy of patients	0.38
17	Practice Evidence-Based Medicine	0.40
18	Promote positive Health	0.44
22	Contribute towards the growth of the medical profession	0.45
19	Communicate compassionately with patients and care givers	0.46
13	Prescribe and safely and minister appropriate therapies	0.48
15	Collaborate with health care professionals	0.50
11	Perform basic clinical procedures independently	0.56
4	Integrate health care policies and guidelines into the routine clinical practice	0.67
5	Cater to the health need of rural, marginalized and differently-abled populations	0.68
9	Choose and interpreted appropriate diagnostic tests based on scientific validity, cost effectiveness (...)	0.75
3	Apply medico-legal principles in health care practice	0.95
1	Differentiate between normal and abnormal structure and function of the human body	1.06
2	Apply ethical and humanitarian principles that influence health care	1.06
8	Perform a relevant physical examination	1.11
7	Elicit, evaluate and interpret a patient's history and medical records	1.18
10	Critically appraise history, examination and diagnostic test findings for differential diagnosis and (...)	1.23

## The top 5 ranking specific competencies by students were:

Rank 1: Critically appraise history, examination and diagnostic test findings for differential diagnosis and (...) (Competency 10)

Rank 2: Elicit, evaluate and interpret a patient's history and medical records. (Competency 7)

Rank 3: Perform a relevant physical examination (competency 8)

Rank 4: Apply ethical and humanitarian principles that influence health care. (Competency 2)

Rank 5: Differentiate between normal and abnormal structure and function of the human body. (Competency 1)

## SPECIFIC Competences - Graduates

Rating and ranking of specific competencies by the graduates are given below in as Figure 7 and Table 9.

**Table 9**

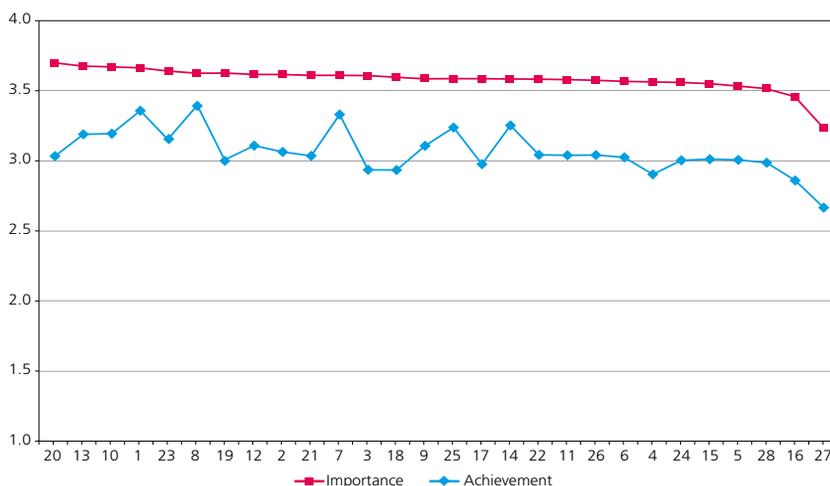
Rating of importance and achievement of specific competencies by graduates

Medicine Graduates Rating			
#	Description	Importance	Achievement
20	Maintain confidentiality and privacy of patients	3.71	3.04
13	Prescribe and safely administer appropriate therapies	3.69	3.18
10	Critically appraise history, examination and diagnostic test findings for differential diagnosis and (...)	3.68	3.20
1	Differentiate between normal and abnormal structure and function of the human body	3.67	3.36
23	Ensure and maintain patient safety	3.65	3.16
8	Perform a relevant physical examination	3.64	3.40

Medicine Graduates Rating			
#	Description	Importance	Achievement
19	Communicate compassionately with patients and care givers	3.63	3.01
12	Maintain appropriate patient records within legal and administrative frame works	3.63	3.11
2	Apply ethical and humanitarian principles that influence health care	3.63	3.06
21	Respect patient autonomy	3.62	3.04
7	Elicit, evaluate and interpret a patient's history and medical records	3.62	3.34
3	Apply medico-legal principles in health care practice	3.62	2.93
18	Promote positive Health	3.60	2.94
9	Choose and interpret appropriate diagnostic tests based on scientific validity, cost effectiveness (...)	3.60	3.11
25	Practice safe and sound biomedical waste management	3.60	3.24
17	Practice Evidence-Based Medicine	3.60	2.98
14	Identify and refer patients for specialized and/or advanced care	3.59	3.26
22	Contribute towards the growth of the medical profession	3.59	3.05
11	Perform basic clinical procedures independently	3.59	3.04
26	Recognize the need for palliative and rehabilitative services	3.59	3.05
6	Recognize health needs of the community and practice community-based comprehensive health care	3.57	3.03
4	Integrate health care policies and guidelines into the routine clinical practice	3.57	2.90
24	Adopt Occupational Health safety practices	3.57	3.00
15	Collaborate with health care professionals	3.56	3.01

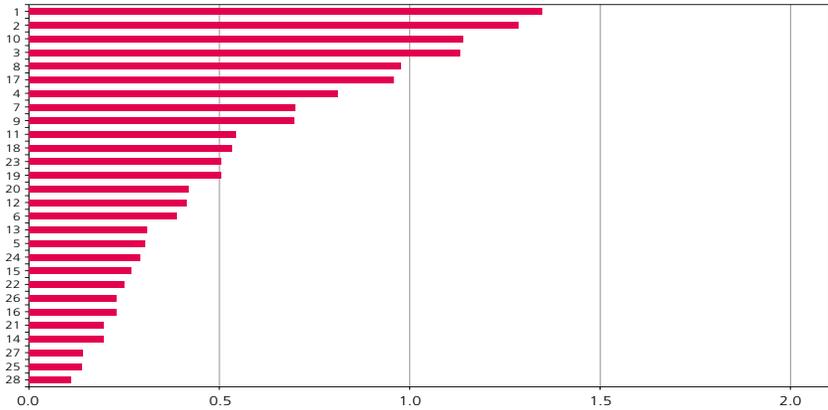
Medicine Graduates Rating			
#	Description	Importance	Achievement
5	Cater to the health needs of rural, marginalized and differently-abled populations	3.54	3.01
28	Be sensitive to the issues of gender and equity in health care practice	3.52	2.99
16	Collect, analyze and utilize health data	3.47	2.87
27	Recognize the role of traditional systems of medicine in health care	3.24	2.67

For all the competencies, there was disparity between importance and achievement by figure 6 and table 9.



**Figure 7**  
Rating of specific competencies of graduates

By the above graph, the relationship between importance and achievement is strong by competency 8(perform a physical examination) and is slightly weak by competency 18(Promote positive Health).



**Figure 8**

The below bar graph shows the rankings of specific competencies of graduates

**Table 10**

Ranking of specific competencies by graduates

Medicine Graduates Rankings		
	Description	Ranking
28	Be sensitive to the issues of gender and equity in health care practice	0.11
25	Practice safe and sound biomedical waste management	0.14
27	Recognize the role of traditional systems of medicine in health care	0.14
14	Identify and refer patients for specialized and/or advanced care	0.20
21	Respect patient autonomy	0.20
16	Collect, analyze and utilize health data	0.23
26	Recognize the need for palliative and rehabilitative services	0.23
22	Contribute towards the growth of the medical profession	0.25
15	Collaborate with health care professionals	0.27
24	Adopt Occupational Health safety practices	0.29
5	Cate to the health needs of rural, marginalized and differently-abled populations	0.31
13	Prescribe and safely administer appropriate therapies	0.31

Medicine Graduates Rankings		
	Description	Ranking
6	Recognize health needs of the community and practice community-based comprehensive health care	0.39
12	Maintain appropriate patient records within legal and administrative frame works	0.42
20	Maintain confidentiality and privacy of patients	0.42
19	Communicate compassionately with patients and care givers	0.51
23	Ensure and maintain patient safety	0.53
18	Promote positive Health	0.53
11	Perform basic clinical procedures independently	0.54
9	Chose and interpret appropriate diagnostic tests based on scientific validity, cost effectiveness (...)	0.70
7	Elicit, evaluate and interpret a patient's history and medical records	0.70
4	Integrate health care policies and guidelines into the routine clinical practice	0.81
17	Practice Evidence-Based Medicine	0.96
8	Perform a relevant physical examination	0.98
3	Apply medico-legal principles in health care practice	1.13
10	Critically appraise history, examination and diagnostic test findings for differential diagnosis and (...)	1.14
2	Apply ethical and humanitarian principals that influence health care	1.29
1	Differentiate between normal and abnormal structure and function of the human body	1.34

**The top 5 ranking specific competencies by graduates were:**

Rank 1: Differentiate between normal and abnormal structure and function of the human body. (Competency 1)

Rank 2: Apply ethical and humanitarian principals that influence health care. (Competency 2)

Rank 3: Critically appraise history, examination and diagnostic test findings for differential diagnosis and (...) (Competency 10)

Rank 4: Apply medico-legal principles in health care practice. (Competency 3)

Rank 5: Perform a relevant physical examination. (Competency 8)

Competencies 2,3 and 4 have been ranked in top 5 by all stakeholders. Therefore, focused efforts are required to bridge the gap between importance and achievement of these competencies.

## Medicine

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### *Correlations between groups*

**Table 11**

Importance of specific competencies of all stakeholders

	Academics	Employers	Students	Graduates
Academics	1.0000			
Employers	0.09269	1.0000		
Students	0.8206	0.8321	1.0000	
Graduates	0.8887	0.9197	0.8185	1.0000

From table 11, correlation between graduates and employers (0.9197) is firm followed by the relation between graduates and academic stakeholders (0.8887). On the contrary, correlation between employers and academics (0.09269) is weak for importance of specific competencies.

**Table 12**

Achievement of specific competencies by all stakeholders

	Academics	Employers	Students	Graduates
Academics	1.0000			
Employers	0.8871	1.0000		
Students	0.8022	0.8217	1.0000	
Graduates	0.8806	0.8967	0.8716	1.0000

From table 12, correlation between graduates and employers (0.8967) is strong followed by correlation between employers and academics (0.8871). while, comparatively, students and academics (0.8022) is weakly correlated.

**Table 13**

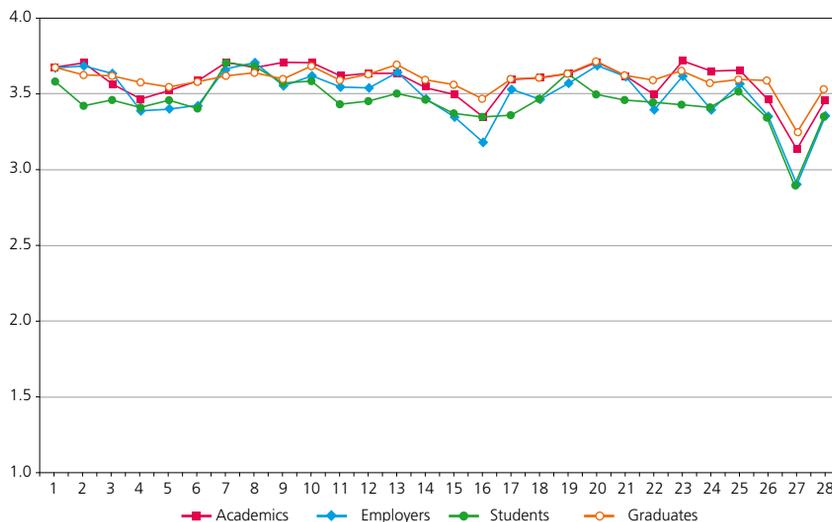
Ranking of specific competencies by all stakeholders

	Academics	Employers	Students	Graduates
Academics	1.0000			
Employers	0.8637	1.0000		
Students	0.6667	0.8711	1.0000	
Graduates	0.7852	0.8533	0.824	1.0000

From table 13, students and employers (0.8711) are significantly correlated followed by employers and academics (0.8637). However, association between students and academic stakeholders (0.6667) is less, indicating a weak correlation.

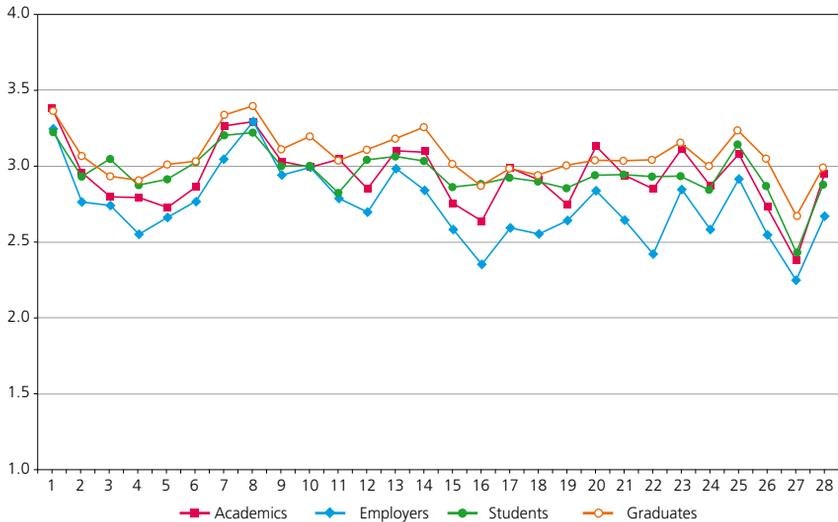
## Generic Competences – All Subject Areas

### Generic competences



**Figure 9**  
Ratings of specific competencies of Importance by all stakeholders

From figure 9, competency 7 (Elicit, evaluate and interpret a patient's history and medical records), competency 8 (Perform a relevant physical examination) and competency 19 (Communicate compassionately with patients and care givers) shows the significant importance by all stakeholders, however competency 27 is at substandard level of importance.



**Figure 10**

Ratings of specific competencies of achievement by all stakeholders

From figure 10 above, all stakeholders from specific competencies accomplished greater achievement for competency 8 (Perform a relevant physical examination), whereas, competency 27 (Recognize the role of traditional systems of medicine in health care) didn't attain appropriate achievement.

**Table 14**

Comparison of ranking of all stakeholders

S No.	Academics	Employers	Students	Graduates
1	2	2	10	1
2	10	10	7	2
3	17	7	8	10
4	23	9	2	3
5	1	8	1	8

The above attributes clearly indicate the desirable correlation between competency **2** (Apply ethical and humanitarian principals that influence health care) competency **10** (Critically appraise history, examination and diagnostic test findings for differential diagnosis and (...)) and competency **1** (Differentiate between normal and abnormal structure and function of the human body)



# 4

## Consultation on competences

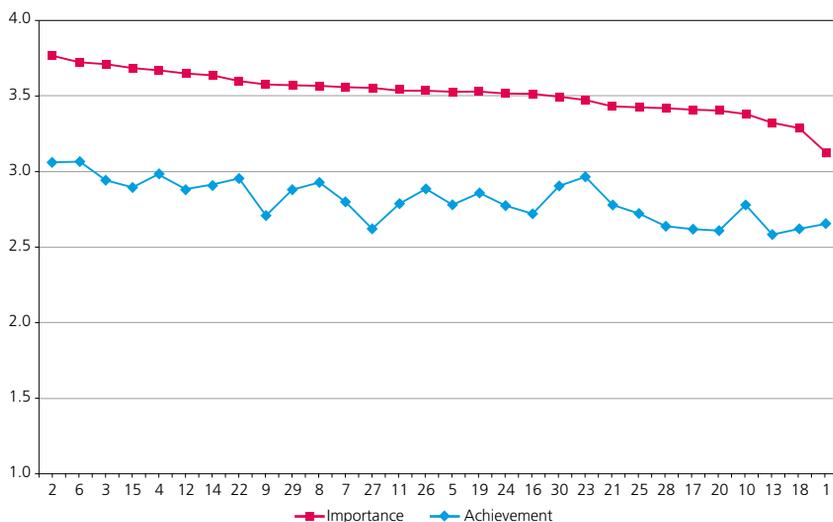
Presentation of analysis of the results of generic competences survey (in relation to SAG perspective). Presentation of analysis of the results of subject specific competences survey. Interpretation of the results.

### Generic competencies

1	Ability to do research
2	Adhere to ethical principles
3	Be socially responsible and humane
4	Ability to apply knowledge in practical situations
5	Ability to plan and manage time efficiently
6	Be a life-long learner
7	Acquire problem solving capacity
8	Ability to make reasoned decisions
9	Have good interpersonal skills
10	Appreciate and respect diversity and multiculturalism
11	Ability to manage crisis effectively
12	Act within the legal framework

13	Demonstrate environmental and economic consciousness
14	Ability to communicate effectively
15	Ability to work as a team
16	Demonstrate higher order thinking skills (analytical, critical, abstract, creative)
17	Be a reflective practitioner
18	Be innovative
19	Ability to work independently in a responsible manner
20	Possess self-confidence and entrepreneurial spirit
21	Be adaptable to emerging trends
22	Practice professionalism
23	Promote and ensure equal opportunities including gender issues
24	Adhere to and enhance quality standards
25	Demonstrate leadership qualities
26	Ability to use available resources optimally and efficiently
27	Ability to manage stress and maintain emotional stability
28	Have organizational and managerial skills
29	Be motivated for self-learning
30	Be goal-oriented

Rating and ranking of generic competencies by the academics are given below in as Figure 11 and Table 15.



**Figure 11**  
Rating of generic competencies by academics

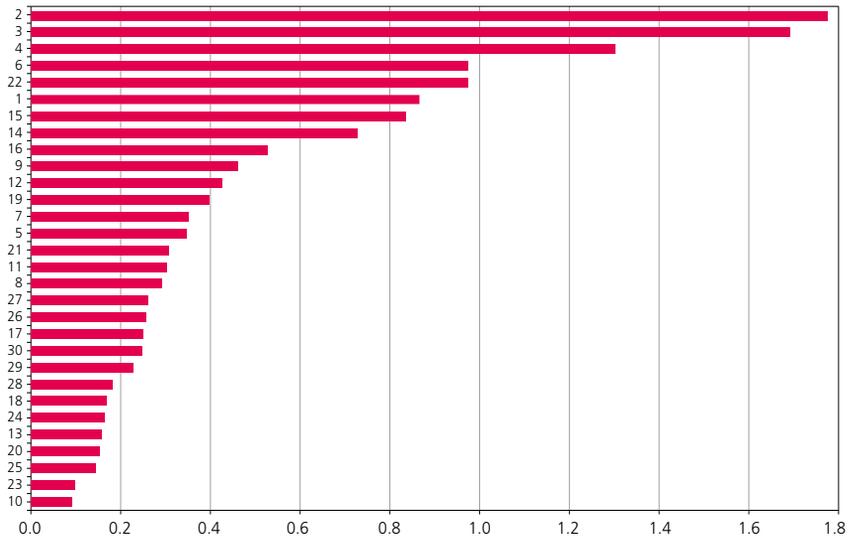
Figure 11 shows the strong relationship between importance and achievement for competency 23 (promote and ensure equal opportunities including gender issues) however, achievement is not showing a satisfactory result with a value less than 3, hence it is to be strengthened. Whereas there is a weak relationship for competency 27 (ability to manage stress and maintain emotional stability).

**Table 15**  
Ratings of importance and achievement by academics

Medicine Academics Ratings			
#	Description	Importance	Achievement
2	Adhere to ethical principles	3.78	3.07
6	Be a Life-long learner	3.74	3.07
3	Be Socially responsible and humane	3.72	2.95
15	Ability to work as a team	3.69	2.89

Medicine Academics Ratings			
#	Description	Importance	Achievement
4	Ability to apply knowledge in practical situations	3.68	2.99
12	Act within the legal frame work	3.66	2.88
14	Ability to communicate effectively	3.65	2.91
22	Practice Professionalism	3.61	2.96
9	Have Good interpersonal skills	3.58	2.71
29	Be motivated for self-learning	3.58	2.88
8	Ability to make reasoned decisions	3.58	2.93
7	Acquire problem solving capacity	3.57	2.80
27	Ability to manage stress and maintain emotional stability	3.56	2.62
11	Ability to manage crisis effectively	3.55	2.79
26	Ability to use available resources optimally and efficiently	3.55	2.89
5	Ability to plan and manage time efficiently	3.53	2.78
19	Ability to work independently in a responsible manner	3.53	2.86
24	Adhere to and enhance quality standards	3.52	2.78
16	Demonstrate higher order thinking skills	3.52	2.73
30	Be goal-oriented	3.51	2.91
23	Promote and ensure equal opportunities including gender issues	3.48	2.97
21	Be adaptable to emerging trends	3.44	2.78
25	Demonstrate leadership qualities	3.43	2.72
28	Have organizational and managerial skills	3.43	2.64
17	Be a reflective practitioner	3.41	2.62
20	Possess self-confidence and entrepreneurial spirit	3.41	2.61
10	Appreciate and respect diversity and multiculturalism	3.39	2.78
13	Demonstrate environmental and economic consciousness	3.33	2.58
18	Be innovative	3.29	2.62
1	Ability to do research	3.13	2.66

For all the competencies, there was disparity between importance and achievement in figure 11 and Table 15.



**Figure 12**

The below bar graph shows the rankings of generic competencies by academics

**Table 16**

Rankings of generic competencies by academics

Medicine Academics Rankings		
#	Description	Ranking
10	Appreciate and respect diversity and multiculturalism	0.09
23	Promote and ensure equal opportunities including gender issues	0.10
25	Demonstrate leadership qualities	0.15
20	Possess self-confidence and entrepreneurial spirit	0.15
13	Demonstrate environmental and economic consciousness	0.16
24	Adhere to and enhance quality standards	0.17
18	Be innovative	0.17
28	Have organizational and managerial skills	0.18

Medicine Academics Rankings		
#	Description	Ranking
29	Be motivated for self-learning	0.23
30	Be goal-oriented	0.25
17	Be a reflective practitioner	0.26
27	Ability to manage stress and maintain emotional stability	0.26
8	Ability to make reasoned decisions	0.29
11	Ability to manage crisis effectively	0.30
21	Be adaptable to emerging trends	0.31
5	Ability to plan and manage time efficiently	0.35
7	Acquire problem solving capacity	0.35
19	Ability to work independently in a responsible manner	0.40
12	Act within the legal frame work	0.43
9	Have good interpersonal skills	0.46
16	Demonstrate higher order thinking skills	0.53
14	Ability to communicate effectively	0.73
15	Ability to work as a team	0.84
1	Ability to do research	0.87
22	Practice professionalism	0.98
6	Be a life-long learner	0.98
4	Ability to apply knowledge in practical situations	1.30
3	Be socially responsible and humane	1.69
2	Adhere to ethical principles	1.78

### The top 5 ranking generic competencies by academics were:

Rank 1: Adhere to ethical principles (Competency 2)

Rank 2: Be socially responsible and humane (Competency 3)

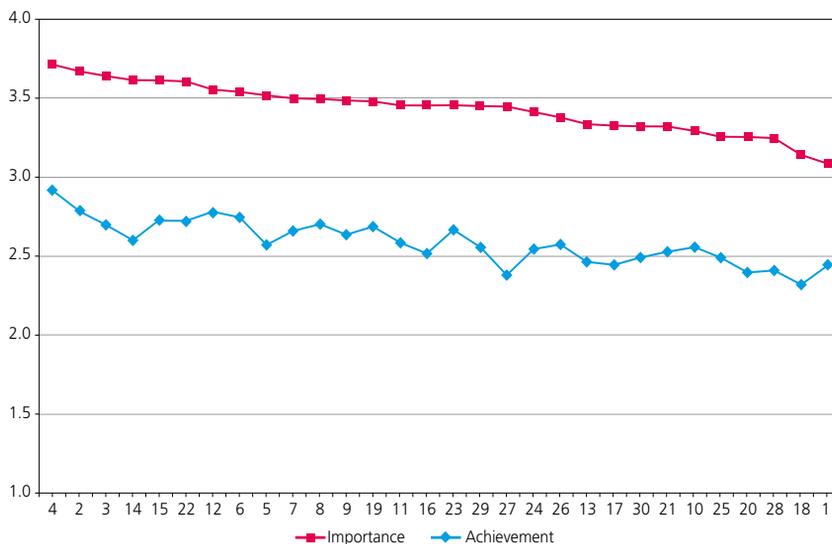
Rank 3: Ability to apply knowledge in practical situations (Competency 4)

Rank 4: Be a life-long learner (Competency 6)

Rank 5: Practice professionalism (Competency 22)

## GENERIC Competences – Employers

Rating and ranking of generic competencies by the employers are given below in as Figure 13 and Table 17.



**Figure 13**  
Ratings of generic competencies by academics

Figure 13 shows the strong relationship between importance and achievement for competency 10 (Appreciate and respect diversity and multiculturalism) but showing inadequate achievement with the mark less than 3, which is to be strengthened. Whereas there is a weak relationship for competency 27 (Ability to manage stress and maintain emotional stability).

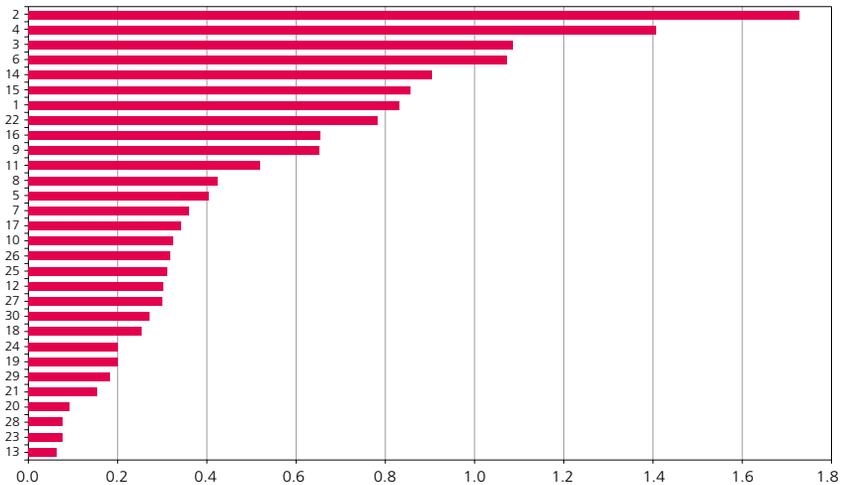
**Table 17**

Ratings of importance and achievement in generic competencies by employers

Medicine Employers Ratings			
#	Description	Importance	Achievement
4	Ability to apply knowledge in practical situations	3.72	2.92
2	Adhere to ethical principles	3.68	2.79
3	Be socially responsible and humane	3.65	2.70
14	Ability to communicate effectively	3.63	2.60
15	Ability to work as a team	3.62	2.73
22	Practice professionalism	3.62	2.72
12	Act within the legal frame work	3.56	2.78
6	Be a life-long learner	3.55	2.75
5	Ability to plan and manage time efficiently	3.52	2.57
7	Acquire problem solving capacity	3.52	2.66
8	Ability to make reasoned decisions	3.50	2.71
9	Have good interpersonal skills	3.49	2.64
19	Ability to work independently in a responsible manner	3.49	2.69
11	Ability to manage crisis effectively	3.47	2.59
16	Demonstrate higher order thinking skills	3.46	2.51
23	Promote and ensure equal opportunities including gender issues	3.46	2.67
29	Be motivated for self-learning	3.46	2.56
27	Ability to manage stress and maintain emotional stability	3.46	2.38
24	Adhere to and enhance quality standards	3.42	2.55
26	Ability to use available resources optimally and efficiently	3.39	2.58
13	Demonstrate environmental and economic consciousness	3.34	2.46
17	Be a reflective practitioner	3.33	2.44
30	Be goal-oriented	3.33	2.49
21	Be adaptable to emerging trends	3.33	2.53

Medicine Employers Ratings			
#	Description	Importance	Achievement
10	Appreciate and respect diversity and multiculturalism	3.26	2.55
25	Demonstrate leadership qualities	3.26	2.49
20	Possess self-confidence and entrepreneurial spirit	3.26	2.40
28	Have organizational and managerial skills	3.25	2.41
18	Be innovative	3.15	2.32
1	Ability to do research	3.10	2.44

For all the competencies, there was disparity between importance and achievement in figure 13 and Table 17.



**Figure 14**

The below bar graph depicts the ranking of generic competencies by employers

**Table 18**

Ranking of generic competencies by employers

Medicine Employers Rankings		
#	Description	Ranking
13	Demonstrate environmental and economic consciousness	0.07
23	Promote and ensure equal opportunities including gender issues	0.08
28	Have organizational and managerial skills	0.08
20	Possess self-confidence and entrepreneurial spirit	0.09
21	Be adaptable to emerging trends	0.15
29	Be motivated for self-learning	0.18
19	Ability to work independently in a responsible manner	0.20
24	Adhere to and enhance quality standards	0.20
18	Be innovative	0.25
30	Be goal-oriented	0.27
27	Ability to manage stress and maintain emotional stability	0.30

Medicine Employers Rankings		
#	Description	Ranking
12	Act within the legal frame work	0.30
25	Demonstrate leadership qualities	0.31
26	Ability to use available resources optimally and efficiently	0.32
10	Appreciate and respect diversity and multiculturalism	0.33
17	Be a reflective practitioner	0.34
7	Acquire problem solving capacity	0.36
5	Ability to plan and manage time efficiently	0.41
8	Ability to make reasoned decisions	0.43
11	Ability to manage crisis effectively	0.52
9	Have good interpersonal skills	0.65
16	Demonstrate higher order thinking skills	0.66
22	Practice professionalism	0.78
1	Ability to do research	0.83
15	Ability to work as a team	0.86
14	Ability to communicate effectively	0.91
6	Be a life-long learner	1.07
3	Be socially responsible and humane	1.09
4	Ability to apply knowledge in practical situations	1.41
2	Adhere to ethical principles	1.73

**The top 5 ranking generic competencies by employers were:**

Rank 1: Adhere to ethical principles (Competency 2)

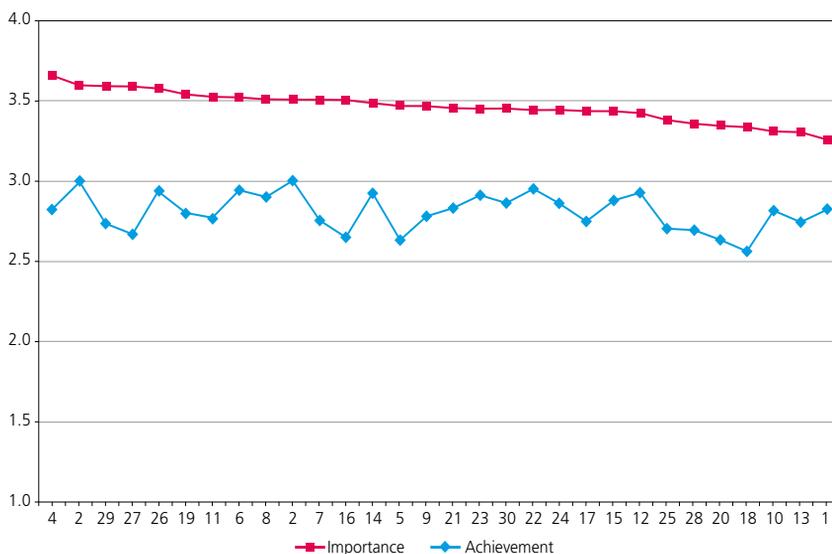
Rank 2: Ability to apply knowledge in practical situations (Competency 4)

Rank 3: Be socially responsible and humane (Competency 3)

Rank 4: Be a life-long learner (Competency 6)

Rank 5: Ability to communicate effectively (Competency 14)

Rating and ranking of generic competencies by the students are given below in as Figure 15 and Table 19.



**Figure 15**  
Rating of generic competencies by students

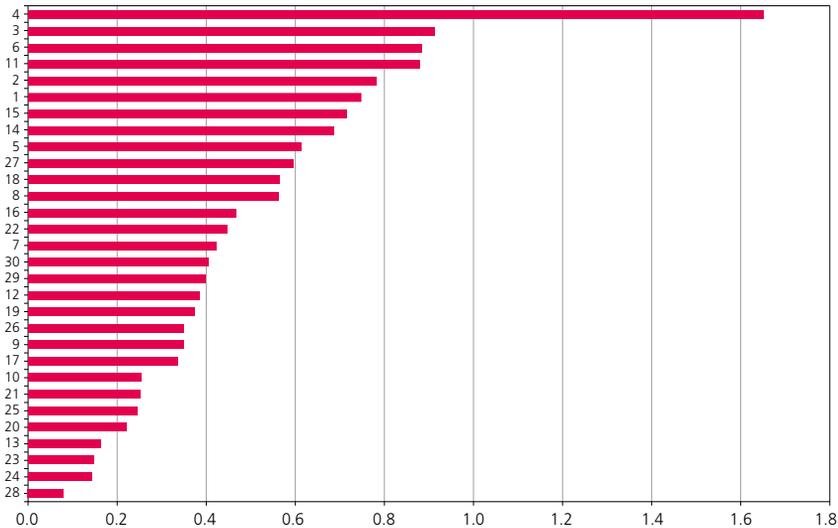
Figure 15 shows the strong relationship between importance and achievement for competency 22 (Practice Professionalism) but showing inadequate achievement with the mark less than 3 i.e., 2.97, which is to be strengthened. Whereas there is a weak relationship for competency 27 (Ability to manage stress and maintain emotional stability).

**Table 19**  
Ratings of importance and achievement of generic competencies by students

Medical Students Ratings			
#	Description	Importance	Achievement
4	Ability to apply knowledge in practical situations	3.68	2.84
3	Be socially responsible and humane	3.62	3.01
29	Be motivated for self-learning	3.62	2.75
27	Ability to manage stress and maintain emotional stability	3.62	2.69

Medical Students Ratings			
#	Description	Importance	Achievement
26	Ability to use available resources optimally and efficiently	3.62	2.96
19	Ability to work independently in a responsible manner	3.56	2.82
11	Ability to manage crisis effectively	3.55	2.78
6	Be a life-long learner	3.55	2.96
8	Ability to make reasoned decisions	3.54	2.92
2	Adhere to ethical principles	3.53	3.02
7	Acquire problem solving capacity	3.53	2.77
16	Demonstrate higher order thinking skills	3.53	2.67
14	Ability to communicate effectively	3.51	2.95
5	Ability to plan and manage time efficiently	3.50	2.66
9	Have good interpersonal skills	3.49	2.79
21	Be adaptable to emerging trends	3.48	2.85
23	Promote and ensure equal opportunities including gender issues	3.48	2.93
30	Be goal-oriented	3.47	2.88
22	Practice Professionalism	3.47	2.97
24	Adhere to and enhance quality standards	3.46	2.88
17	Be a reflective practitioner	3.46	2.77
15	Ability to work as a team	3.46	2.90
12	Act with in the legal frame work	3.45	2.95
25	Demonstrate leadership qualities	3.40	2.72
28	Have organizational and managerial skills	3.38	2.71
20	Possess self-confidence and entrepreneurial spirit	3.37	2.65
18	Be innovative	3.35	2.58
10	Appreciate and respect diversity and multiculturalism	3.33	2.83
13	Demonstrate environmental and economic consciousness	3.33	2.76
1	Ability to do research	3.28	2.84

For all the competencies, there was disparity between importance and achievement in figure 15 and Table 19.



**Figure 16**  
Ranking of generic competencies by students

**Table 20**  
Rankings of generic competencies by students

Medicine Students Rankings		
#	Description	Ranking
28	Have organizational and managerial skills	0.08
24	Adhere to and enhance quality standards	0.14
23	Promote and ensure equal opportunities including gender issues	0.15
13	Demonstrate environmental and economic consciousness	0.16
20	Possess self-confidence and entrepreneurial spirit	0.22
21	Be adaptable to emerging trends	0.25
10	Appreciate and respect diversity and multiculturalism	0.25
17	Be a reflective practitioner	0.33

Medicine Students Rankings		
#	Description	Ranking
9	Have good interpersonal skills	0.35
26	Ability to use available resources optimally and efficiently	0.35
19	Ability to work independently in a responsible manner	0.37
12	Act within the legal frame work	0.38
29	Be motivated for self-learning	0.40
30	Be goal-oriented	0.40
7	Acquire problem solving capacity	0.42
22	Practice professionalism	0.44
16	Demonstrate higher order thinking skills	0.46
8	Ability to make reasoned decisions	0.56
18	Be innovative	0.56
27	Ability to manage stress and maintain emotional stability	0.59
5	Ability to plan and manage time efficiently	0.61
14	Ability to communicate effectively	0.69
15	Ability to work as a team	0.71
1	Ability to do research	0.75
2	Adhere to ethical principles	0.78
11	Ability to manage crisis effectively	0.88
6	Be a life-long learner	0.88
3	Be socially responsible and humane	0.91
4	Ability to apply knowledge in practical situations	1.65

**The top 5 ranking generic competencies by students were:**

Rank 1: Ability to apply knowledge in practical situations (Competency 4)

Rank 2: Be socially responsible and humane (Competency 3)

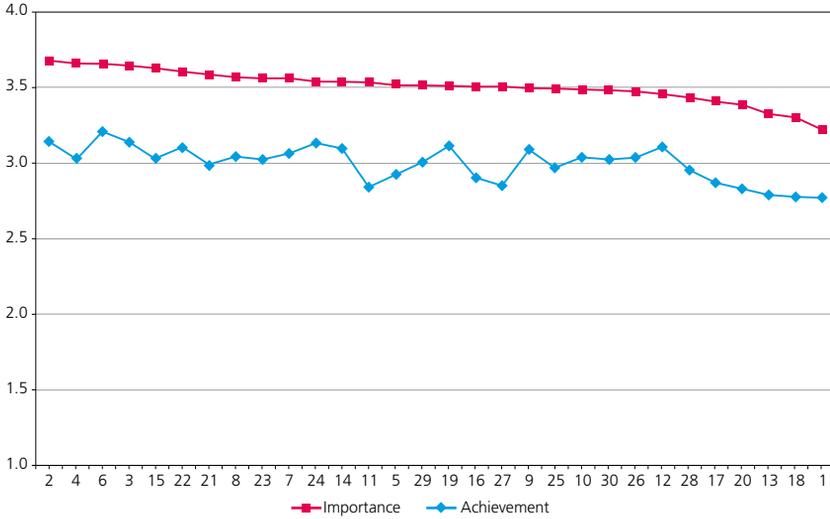
Rank 3: Be a life-long learner (Competency 6)

Rank 4: Ability to manage crisis effectively (Competency 11)

Rank 5: Adhere to ethical principles (Competency 2)

## GENERIC Competences – Graduates

Rating and ranking of generic competencies by the graduates are given below in as Figure 17 and Table 21.



**Figure 17**  
Ratings of generic competencies by graduates

Figure 17 shows the strong relationship between importance and achievement for competency 12 (Act within the legal frame work) showing an adequate achievement with the mark greater than 3 i.e., 3.10. Whereas there is a weak relationship for competency 27 (Ability to manage stress and maintain emotional stability).

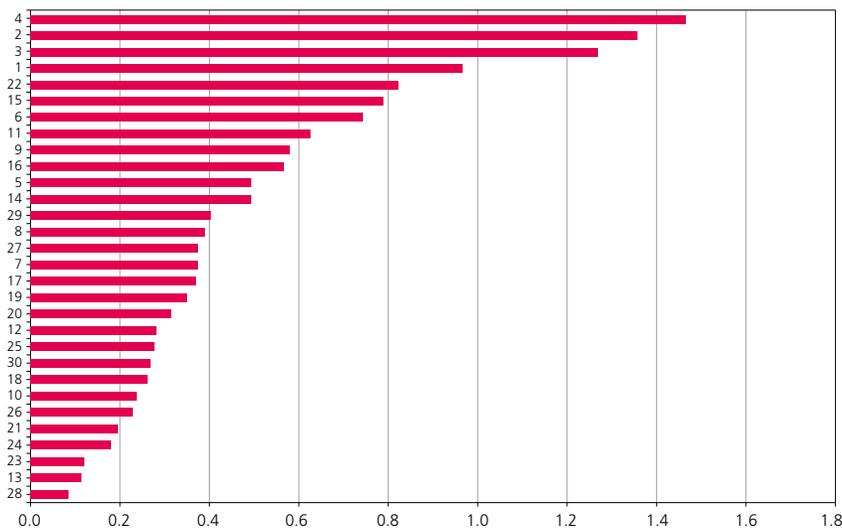
**Table 21**

Ratings of importance and achievement of generic competencies by graduates

Medicine Graduates Ratings			
#	Description	Importance	Achievement
2	Adhere to ethical principles	3.68	3.14
4	Ability to apply knowledge in practical situations	3.66	3.03
6	Be a life-long learner	3.66	3.21
3	Be socially responsible and humane	3.64	3.14
15	Ability to work as a team	3.63	3.03
22	Practice professionalism	3.60	3.10
21	Be adaptable to emerging trends	3.59	2.98
8	Ability to make reasoned decisions	3.57	3.04
23	Promote and ensure equal opportunities including gender issues	3.56	3.02
7	Acquire problem solving capacity	3.56	3.06
24	Adhere to and enhance quality standards	3.54	3.13
14	Ability to communicate effectively	3.54	3.09
11	Ability to manage crisis effectively	3.53	2.83
5	Ability to plan and manage time efficiently	3.52	2.92
29	Be motivated for self-learning	3.52	3.00
19	Ability to work independently in a responsible manner	3.51	3.11
16	Demonstrate higher order thinking skills	3.50	2.89
27	Ability to manage stress and maintain emotional stability	3.50	2.84
9	Have good interpersonal skills	3.49	3.09
25	Demonstrate leadership qualities	3.49	2.96
10	Appreciate and respect diversity and multiculturalism	3.49	3.03
30	Be goal-oriented	3.48	3.02

Medicine Graduates Ratings			
#	Description	Importance	Achievement
26	Ability to use available resources optimally and efficiently	3.47	3.03
12	Act within the legal frame work	3.45	3.10
28	Have organizational and managerial skills	3.43	2.95
17	Be a reflective practitioner	3.41	2.86
20	Possess self-confidence and entrepreneurial spirit	3.38	2.82
13	Demonstrate environmental and economic consciousness	3.33	2.78
18	Be innovative	3.30	2.77
1	Ability to do research	3.22	2.77

For all the competencies, there was disparity between importance and achievement in figure 17 and Table 21.



**Figure 18**  
Rankings of generic competencies of graduates

**Table 22**  
Rankings of generic competencies by graduates

Medicine Graduates Rankings		
#	Description	Ranking
28	Have organizational and managerial skills	0.08
13	Demonstrate environmental and economic consciousness	0.11
23	Promote and ensure equal opportunities including gender issues	0.12
24	Adhere to and enhance quality standards	0.18
21	Be adaptable to emerging trends	0.19
26	Ability to use available resources optimally and efficiently	0.23
10	Appreciate and respect diversity and multiculturalism	0.24
18	Be innovative	0.26
30	Be goal-oriented	0.27
25	Demonstrate leadership qualities	0.28
12	Act within the legal frame work	0.28
20	Possess self-confidence and entrepreneurial spirit	0.31
19	Ability to work independently in a responsible manner	0.35
17	Be a reflective practitioner	0.37
7	Acquire problem solving capacity	0.37
27	Ability to manage stress and maintain emotional stability	0.37
8	Ability to make reasoned decisions	0.39
29	Be motivated for self-learning	0.40
14	Ability to communicate effectively	0.49
5	Ability to plan and manage time efficiently	0.49
16	Demonstrate higher order thinking skills	0.56
9	Have good interpersonal skills	0.58
11	Ability to manage crisis effectively	0.63
6	Be a life-long learner	0.74
15	Ability to work as a team	0.79
22	Practice professionalism	0.82
1	Ability to do research	0.96

Medicine Graduates Rankings		
#	Description	Ranking
3	Be socially responsible and humane	1.27
2	Adhere to ethical principles	1.36
4	Ability apply knowledge in practical situations	1.46

**The top 5 ranking generic competencies by graduates were:**

Rank 1: Ability apply knowledge in practical situations (Competency 4)

Rank 2: Adhere to ethical principles (Competency 2)

Rank 3: Be socially responsible and humane (Competency 3)

Rank 4: Ability to do research (Competency 1)

Rank 5: Practice professionalism (Competency 22)

## Medicine

### Correlation between groups

**Table 23**

Importance of generic competencies by all stakeholders

	Academics	Employers	Students	Graduates
Academics	1.0000			
Employers	0.9238	1.0000		
Students	0.7435	0.7126	1.0000	
Graduates	0.8746	0.8336	0.6934	1.0000

From the table 23, employers and academics (0.9239) show a significant correlation followed by graduates and academics (0.8746). whereas, graduates and students (0.6934) show a fragile liaison, depicting a weak correlation.

**Table 24**

Achievement of generic competencies by all stakeholders

	Academics	Employers	Students	Graduates
Academics	1.0000			
Employers	0.8446	1.0000		
Students	0.7959	0.7026	1.0000	
Graduates	0.7982	0.7540	0.7426	1.0000

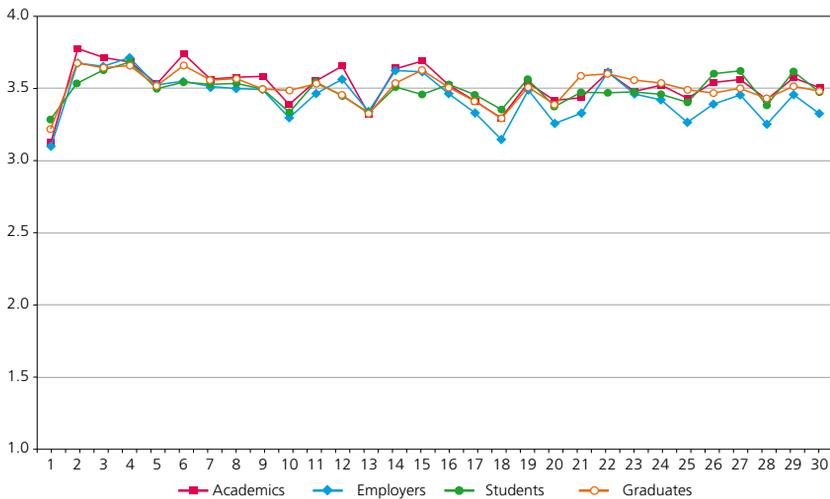
From table 24, correlation between employers and academics (0.8446) is firm, followed by graduates and academics (0.7982). comparatively, correlation between students and employers (0.7026) is slightly weak.

**Table 25**

Ranking of generic competencies by all stakeholders

	Academics	Employers	Students	Graduates
Academics	1.0000			
Employers	0.9315	1.0000		
Students	0.7124	0.7907	1.0000	
Graduates	0.9335	0.9324	0.8435	1.0000

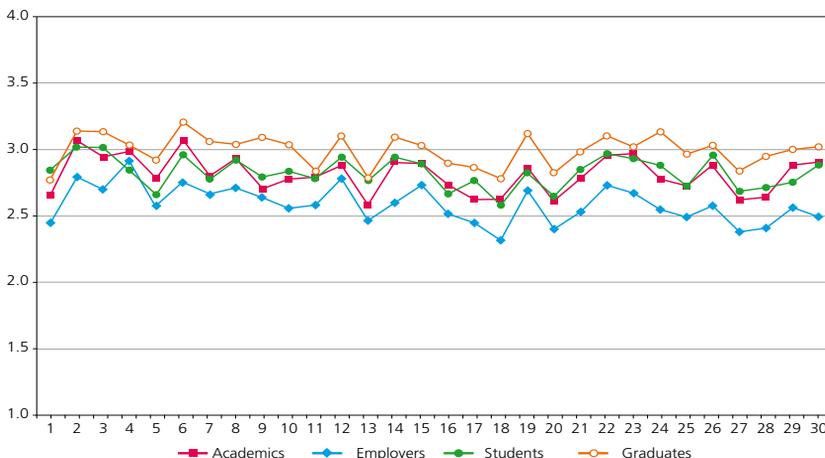
From table 25, correlation between graduates and academics (0.9335) is strong followed by graduates and employers (0.9324). On the contrary, there is a slight correlation between students and academics (0.7124).



**Figure 19**

Ratings of importance of generic competencies by all stakeholders

From figure 19, competency 5 (Ability to plan and manage time efficiently), competency 13 (Demonstrate environmental and economic consciousness) and competency 19 (Ability to work independently in a responsible manner) are showing more importance however competency 27 is at standard level of importance.



**Figure 20**

Ratings of achievement of generic competencies by all stakeholders

From figure 20, among all stakeholders, competency 4 (Ability to apply knowledge in practical situations) and competency 19 (ability to work independently in a responsible manner) are significant in its achievement, which shows that more efforts are to be applied to achieve the importance at greater instance.

**Table 26**

Comparison of ranking of stakeholders for generic competencies

S no.	Academics	Employers	Students	Graduates
1	2	2	4	4
2	3	4	3	2
3	4	3	6	3
4	6	6	11	1
5	22	14	2	22

The above attributes clearly indicate the desirable correlation between competency **2** (Adhere to ethical principles), competency **3** (Be socially responsible and humane) and **competency 4** (Ability apply knowledge in practical situations).

## Discussion

From the study being conducted, the administered questionnaire to all stakeholders (Academics, Employers, students and Graduates) revealed the importance and achievement of both specific and generic competencies, providing the ratings, rankings and correlations and also comparison between all the groups.

### Ratings

Specific competencies- In ratings of importance, all stakeholders have shown their preference for competency 7 (Acquire problem solving capacity), 8 (Ability to make reasoned decisions) and 19 (Ability to work independently in a responsible manner) whereas competency 27 (Ability to manage stress and maintain emotional stability) is considered as substandard level of importance. In ratings of achievement, competency 8 (Ability to make reasoned decisions) is achieved closely, however competency 27 (Ability to manage stress and maintain emotional stability) is less achieved.

Generic competencies- In ratings of importance, all stakeholders have shown their preference for competency 5 (Ability to plan and manage time efficiently), 13 (Demonstrate environmental and economic consciousness) and 19 (Ability to work independently in a responsible manner) whereas competency 27 (Ability to manage stress and maintain emotional stability) is considered as less important according to the ratings given. In ratings of achievement, competency 4 is showing best achievement.

(Ability to manage stress and maintain emotional stability)

### Rankings

Specific competencies- Competency **2** (Apply ethical and humanitarian principals that influence health care) competency **10** (Critically appraise history, examination and diagnostic test findings for differential diagnosis and (...)) and competency **1** (Differentiate between normal and abnormal structure and function of the human body) are given the top rankings in importance and achievement.

Generic competencies- Competency **2** (Adhere to ethical principles), competency **3** (Be socially responsible and humane) and competency

**4** (Ability apply knowledge in practical situations) have been given the top rankings in both importance and achievement.

## Correlation

In specific competencies there is a strong correlation between graduates and employers in both importance and achievement but employers and academics have shown a weak bond. In generic competencies employers and academics have shown a strong relation between each other in both specific and generic competencies whereas, liaison of students with other stakeholders is less effective.

## Conclusion

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By the calculation of ratings and rankings, competency 8 (Ability to make reasoned decisions) in specific competencies is of great importance and in generic competencies, competency 19 (ability to work independently in a responsible manner) is considered more important. However, competency 27 (Ability to manage stress and maintain emotional stability) is comparatively less, in both specific and generic competencies, which is important and need to be focused.



# 5

## Elaboration of Meta-Profiles

### Contrast of Meta-Profile at national level

#### *Student Workload reflection*

Student work load: This aims to estimate the approximate the real volume of work hours needed by a student to pass the unit/course/module from the point of view of teachers' planning and perception and students' opinion.

STUDENTS' WORKLOAD SURVEY ANALYSIS: In order to estimate adequately the workload required for students to achieve the learning outcomes specified in the curriculum, special survey on students' workload at Indian universities was conducted. The process included the involvement of academics and students as the key groups of the survey. This survey of work load estimation will help to improve the degree programmes designed.

## Survey questions

The following were the questions used for the survey:

	Academics	Students
1.	<p><b>How many CONTACT HOURS* in total were you given to study this unit/course/module along the SEMESTER?</b></p> <p>* Contact hours: the amount of time spent on training in contact with the teacher or other staff of the university in the study of a particular unit/course/module. It includes lectures, seminars, clinical practices, labs, project work and field work (supervised).</p>	<p><b>How many CONTACT HOURS* in total were you given to study this unit/course/module along the SEMESTER?</b></p> <p>* Contact hours: the amount of time spent on training in contact with the teacher or other staff of the university in the study of a particular unit/course/module. It includes lectures, seminars, clinical practices, labs, project work and field work (supervised).</p>
2.	<p><b>Specify the types of INDEPENDENT WORK you promote in the unit/course/module along the SEMESTER.</b> Enter the estimated number of hours which, in your opinion, should the student have in order to complete self-work on unit/course/module.</p>	<p><b>Specify the types of INDEPENDENT WORK you use to learn the unit/course/module along the SEMESTER.</b> Enter the estimated number of hours that you needed to complete self-work on unit/course/module.</p>
3.	<p>How many hours does an AVERAGE student need to complete all the requirements of the unit/course/module in this SEMESTER (taking into account CONTACT HOURS and INDEPENDENT WORK)?</p>	<p>How many hours did you spend in the SEMESTER to complete all the requirements of the unit/course/module (taking into account CONTACT HOURS and INDEPENDENT WORK)?</p>
4.	<p>How many hours per WEEK does an AVERAGE student study (both CONTACT HOURS AND INDEPENDENT WORK) to complete all the requirements of the unit/course/module?</p>	<p>How many hours per WEEK did you spend (both CONTACT HOURS AND INDEPENDENT WORK) to complete all the requirements of the unit/course/module?</p>
5.	<p>When planning the workload for your unit/course/module, do you consider necessary to include hours for independent work of students?</p>	<p>Have you been aware of the number of hours planned for the students for independent work in the unit/course/module?</p>
6.	<p>Do you take students' expectations and evaluation into consideration when planning the workload for the course?</p>	<p>Has the professor guided you at the beginning of the unit/course/module on the necessary workload for each part of the independent work?</p>

## *Data Editing, Cleaning & Checking and Consistency*

The raw database went through the standard process of editing, cleaning and checking for extreme, invalid or inconsistent values. Given the nature of the survey, where individuals were asked to give rough estimates referred to the number of hours devoted to different academic activities within different time periods (semester, week), some inconsistencies and errors were to be expected. At the same time, and as it happens in many surveys, some questions were left unanswered sometimes or individuals assigned values which could be considered as inconsistent. The process of data checking/cleaning was performed on each of the variables separately. Careful analysis was carried out observing the distribution of different variables to decide what could be considered as inconsistent within each variable based on the analysis of outliers. As it could be expected, the number of outliers was higher among students than among academics.

## *Calculating Results*

Results have been displayed according to the four different areas divided into academics and students. The methodology implies that in order to include a given academic institution in the final results, at least one value was requested for all courses constituting one given semester.

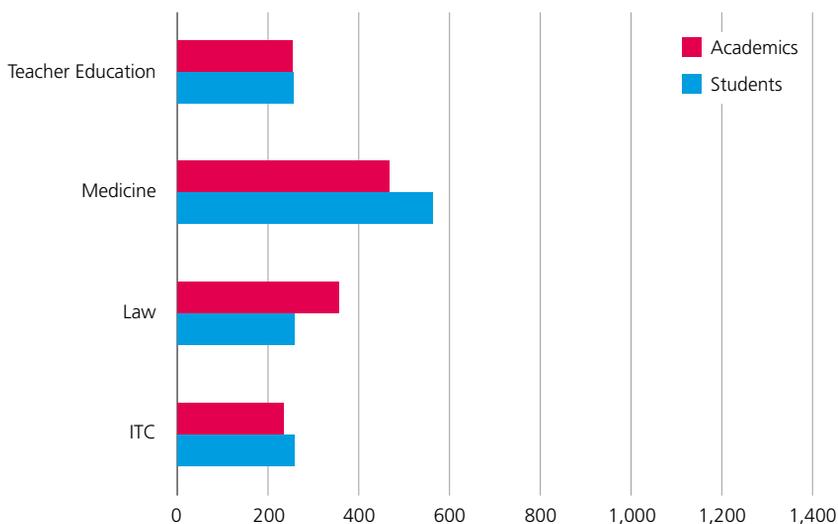
## Survey Results

How many CONTACT HOURS in total were you given to study above-mentioned unit/course/module along the SEMESTER? (in hours) (1)

	Students	Academics
<b>ICT</b>	260.09	236.94
<b>Law</b>	261.54	357.44
<b>Medicine</b>	565.15	467.55
<b>Teacher Education</b>	256.27	254.17

### Mean values for each area and group

How many CONTACT HOURS in total were you given to study this unit/course/module along the SEMESTER?

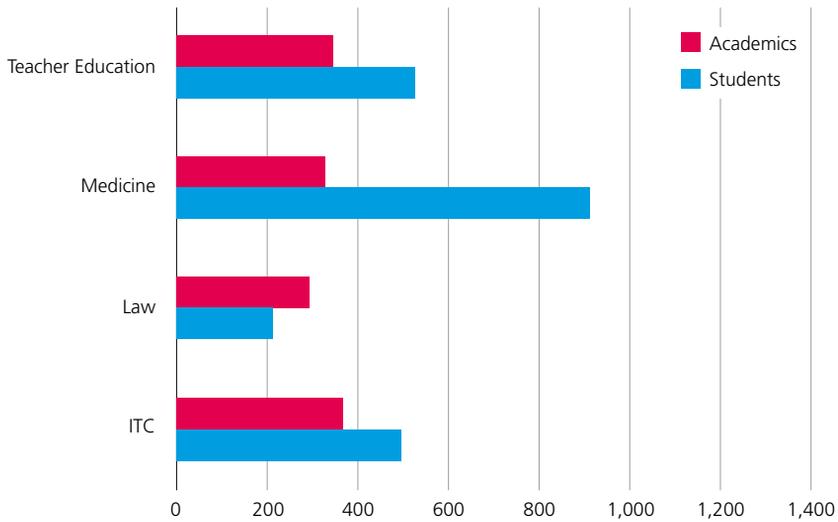


## Independent work

	Reading texts or literature including search and work with internet sources (in hours)		Fieldwork, site visits, etc. - not supervised (in hours)		Laboratory work: not supervised and not counted in contact hours (in hours)		Preparation of assignments: essays, reports, design work, modelling, interviews, presentations, etc. (in hours)		Preparation and follow-up work for scheduled classes (in hours)		Preparation for assessment, final examinations, tests, etc. (in hours)		Total independent work hours per semester (Z)	
	Students	Academics	Students	Academics	Students	Academics	Students	Academics	Students	Academics	Students	Academics	Students	Academics
<b>ICT</b>	121.42	99.28	16.42	0.00	61.53	50.73	95.57	59.65	75.48	70.84	127.18	86.68	497.59	367.18
<b>Law</b>	49.55	78.08	9.07	0.00	12.68	30.73	69.48	65.45	25.07	50.29	46.97	67.48	212.83	292.03
<b>Medicine</b>	202.51	88.78	90.76	13.39	132.64	27.93	127.60	68.85	124.95	59.29	235.49	71.28	913.95	329.51
<b>Teacher Education</b>	152.93	98.90	28.20	14.79	33.00	23.83	133.50	75.62	94.97	61.52	84.88	71.77	527.49	346.43

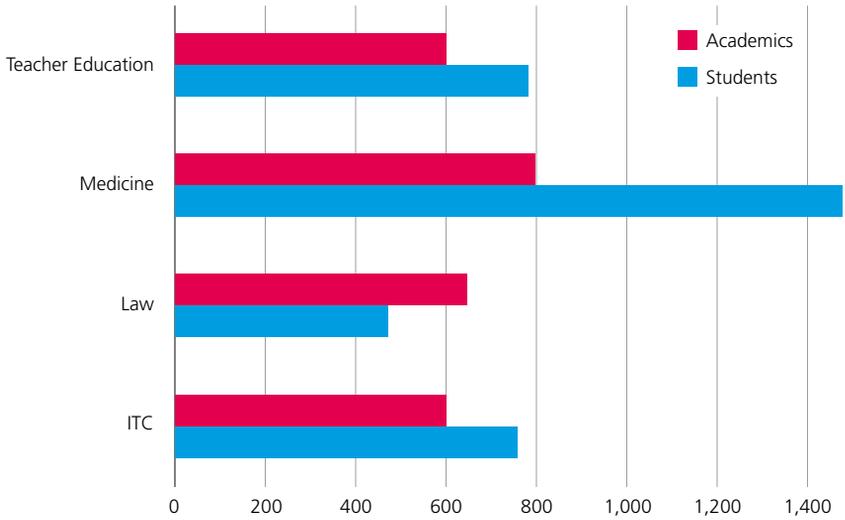
Mean values for each area and group. The final column containing the total is the sum of all previous columns.

Total INDEPENDENT WORK to learn the unit/course/module along the SEMESTER



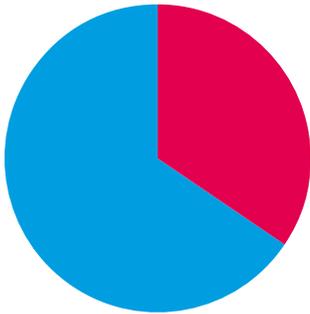
	How many CONTACT HOURS in total were you given to study above-mentioned unit/course/module along the SEMESTER? (in hours) (1)		Total independent work hours per semester (2)		Total = Contact (1) + Independent work (2)	
	Students	Academics	Students	Academics	Students	Academics
<b>ICT</b>	260.09	236.94	497.59	367.18	757.68	604.12
<b>Law</b>	261.54	357.44	212.83	292.03	474.36	649.47
<b>Medicine</b>	565.15	467.55	913.95	329.51	1479.10	797.07
<b>Teacher Education</b>	256.27	254.17	527.49	346.43	783.76	600.59

Total CONTACT HOURS and INDEPENDENTWORK to learn the unit/ course/module along the SEMESTER

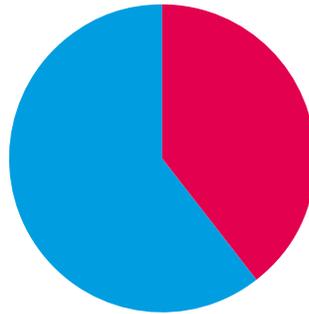


% Contact hours vs Independent Work

ICT - Students



ICT - Academics



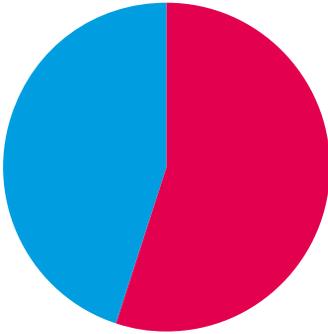
■ %Contact hours ■ %Independent work hours

■ %Contact hours ■ %Independent work hours

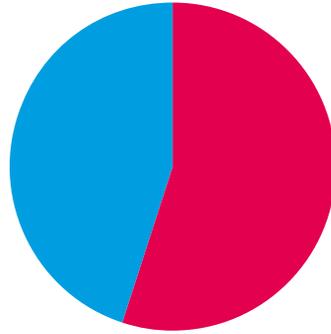
ICT

## % Contact hours vs Independent Work

**Law - Students**



**Law - Academics**

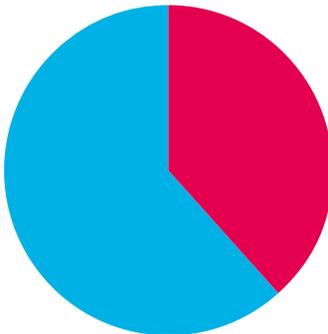


■ %Contact hours ■ %Independent work hours ■ %Contact hours ■ %Independent work hours

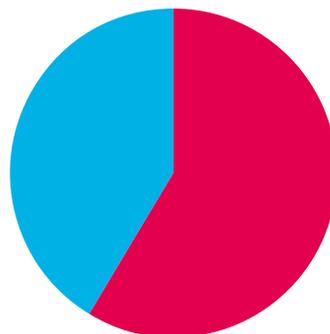
Law

## % Contact hours vs Independent Work

**Medicine - Students**



**Medicine - Academics**

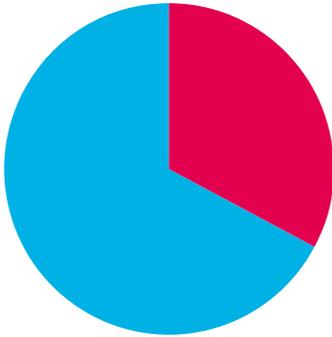


■ %Contact hours ■ %Independent work hours ■ %Contact hours ■ %Independent work hours

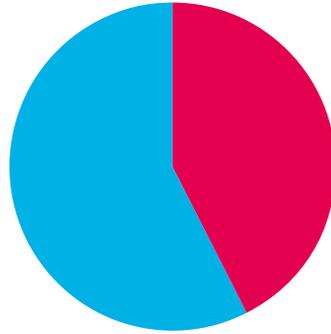
Medicine

## % Contact hours vs Independent Work

**Teacher Education - Students**



**Teacher Education - Academics**



■ %Contact hours ■ %Independent work hours ■ %Contact hours ■ %Independent work hours

### Teacher Education

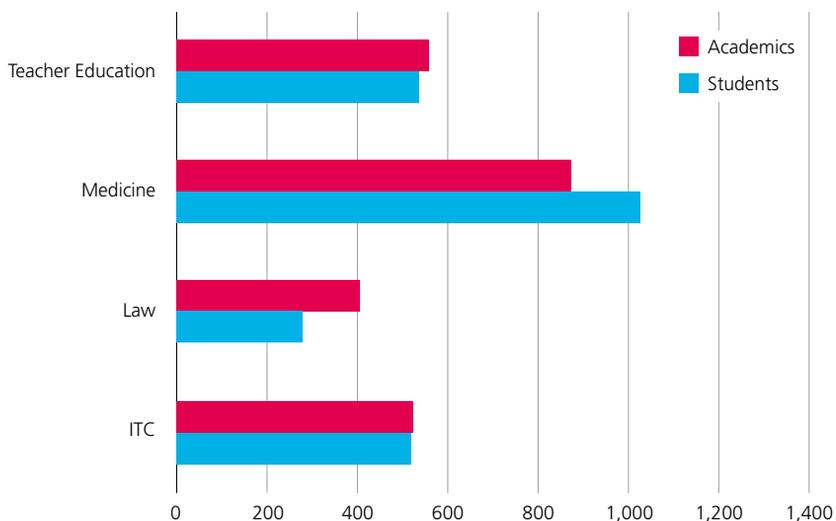
How many hours does an AVERAGE student need to complete all the requirements of the unit/course/module in this SEMESTER (taking into account CONTACT HOURS and INDEPENDENT WORK)? (Students)

How many hours did you spend in the SEMESTER to complete all the requirements of the unit/course/module (taking into account CONTACT HOURS and INDEPENDENT WORK)? (Academics)

	Students	Academics
<b>ICT</b>	523.23	524.05
<b>Law</b>	282.20	406.28
<b>Medicine</b>	1029.63	874.85
<b>Teacher Education</b>	538.26	561.38

### Mean values for each area and group

Hours needed to complete all the requirements of the unit/course/module in this SEMESTER (taking into account CONTACT HOURS and INDEPENDENT WORK)



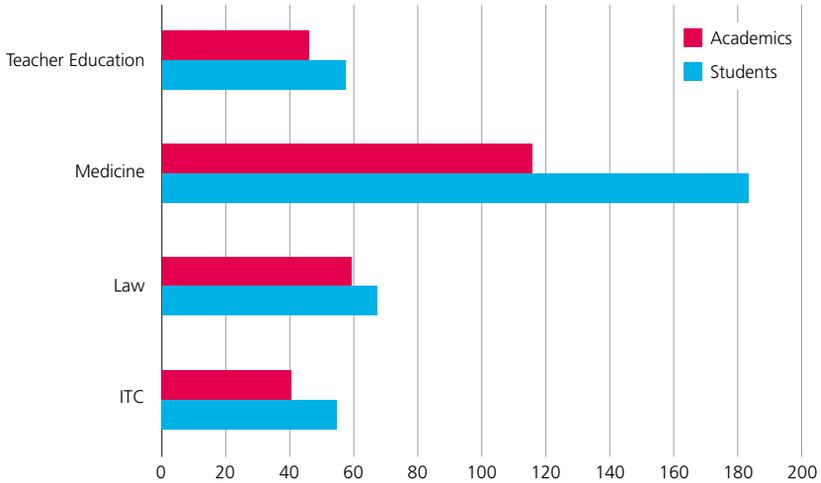
How many hours per WEEK does an AVERAGE student study (both CONTACT HOURS AND INDEPENDENT WORK) to complete all the requirements of the unit/course/module? (Students)

How many hours per WEEK did you spend (both CONTACT HOURS AND INDEPENDENT WORK) to complete all the requirements of the unit/course/module? (Academics)

	Students	Academics
<b>ICT</b>	54.45	40.89
<b>Law</b>	67.23	59.17
<b>Medicine</b>	183.05	115.51
<b>Teacher Education</b>	57.44	46.10

Respondent reported directly the total number of hours per week (both contact hours and independent work).

Hours PER WEEK (both CONTACT HOURS AND INDEPENDENT WORK) to complete all the requirements of the unit/course/module



	%Academics saying YES to...		%Students saying YES to...	
	When planning the workload for your unit/course/module, do you consider necessary to include hours for independent work of students?	Do you take students' expectations and evaluation into consideration when planning the workload for the course?	Have you been aware of the number of hours planned for the students for independent work in the unit/course/module?	Has the professor guided you at the beginning of the unit/course/module on the necessary workload for each part of the independent work?
<b>ICT</b>	83.00%	74.00%	56.66%	80.91%
<b>Law</b>	84.24%	93.94%	71.85%	95.55%
<b>Medicine</b>	85.40%	87.91%	62.41%	78.66%
<b>Teacher Education</b>	93.33%	100.00%	93.39%	98.51%

## Reflections:

- Discrepancy in total contact hours between students and faculty in all streams except teacher education
- Maximum discrepancy in independent hours in medicine stream between academics and faculty
- Discrepancy in total hours (contact and independent) between students and faculty in all streams, maximum in medicine
- Discrepancy in average number of hours required to complete the semester/module between students and academics in all streams except teacher education
- Discrepancy in number of hours per week to complete the semester/module in all streams between academics and students, maximum in medicine stream
- Lack of inclusion of students while planning the contact and independent work hours in all streams except teacher education.
- The discrepancy in almost all parameters is glaring in medicine stream and could be due to large course content and reading resources, evolving nature of the stream and overlap of subjects in different semester. Or maybe due to lack of understanding of the description of survey question.

# 6

## Examples of revised/new programmes

### 1. Name and level of the programme

Agree on a name which is clear and reflects the aims and the purpose of the programme; please mention if it is a new or revised programme. Define and indicate the level of the programme; indicate if the programme gives access to further studies. Questions:

1. Does the name reflect the aims and purpose of the programme?
2. Is the programme at bachelor's or master's level?
3. Are the access (eligibility) requirements and a possible progression from this degree to further studies made clear?

Bachelor of Medicine and Bachelor of Surgery (MBBS)

This template describes an additional module added in this program (MBBS). This module is on concepts of Basic medical research. It will be a part of MBBS curriculum that runs longitudinally across the course.

### 2. The social needs of the programme

State what local, national or global needs the programme has been (re) designed to meet; include a justification for the programme in terms of the local / national / international social needs + a mention of why the programme has been revised. Questions:

1. It is clear why the programme is necessary – what social needs are relevant for the local/national (as well as possibly international) context it has been (re)designed to meet?
2. Is it clear why the programme is revised, what stipulated the revision of the programme, and what improvement is sought in the revision?

Full response must:

- State clearly why the programme is necessary – what social needs relevant for the local/national (as well as possibly international) context it has been (re)designed to meet
- State clearly why the programme is being revised:
  - What stipulated the revision of the programme undertaken
  - What aspects were the focus of the revision (which competences and/or aspects of the curriculum the authors of the revision sought to reinforce/improve)

The Indian undergraduate curriculum is revised in 2019 and the goal is to create physician of first contact in the Indian context while being globally relevant. To be globally competent it is imperative that they possess skills to critically appraise research papers in addition to excellence in academics, since Evidence based medicine is propagated all over the globe. This skill of evidence gathering will be honed by initiating a student early into research. Training in research will further, a trainee's, critical thinking skills, problem solving capacity and enable them to make informed judgement for the best possible care of their patients. Moreover, stimulating the students early into research will help them inculcate the qualities to be a lifelong learner, a defined role of an Indian Medical Graduate.

The revised curriculum has introduced some standalone concepts of research under different courses; however, this aspect as not been described in detail. Hence this complete module of concepts of Basic Medical Research.

### 3. Future fields, sectors of employment/ occupation of graduates

Indicate where students who successfully complete the programme can work – what type of occupations and the jobs they are likely to have. Questions:

1. Does the description help students to have a clear (and realistic!) idea of future sectors of employment or further study possibilities?
2. Will your prospective students understand the descriptions provided?
3. Is the list of potential occupations sufficiently detailed?

Full response must:

- Give students a clear (and realistic!) idea of future sectors of employment and further study possibilities
- Provide the list of potential occupations which is sufficiently detailed
- Be written in such a way that prospective students (current school students/ Bachelor students) can understand
  - What jobs they are likely to have
  - What higher studies they might pursue

This module will equip the undergraduate with additional skills in research and give them the edge over others in the field of research oriented postgraduate programs.

This module will also help a graduate during the post graduate program, in which research thesis is an integral component.

This add-on module in the existing MBBS program will appeal to students to take up programs in which research is a core subject.

They can also work as research assistants for clinical trials at hospitals/ research institutes/ pharma companies

It will mold them into practitioners with critical thinking capabilities and help practice evidence based medicine in private clinics.

#### 4. Description of the degree profile in terms of generic and subject-specific competences

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Express the desired graduate profile in terms of competences and list these, indicating which you consider to be generic and/or subject-specific. Formulate programme-level expected learning outcomes, indicating which competence each of them is related to; check for consistency.

Remember that the competences have to be formulated from the student's point of view. Their formulation should begin with a verb in infinitive and refer to the contents involved and their application.

Learning Outcomes are statements which allow to measure whether students have developed their competences to the required level. They must be formulated in third singular person.

#### *Programme-Level Learning Outcomes (minimum 1 - maximum 3 per competence)*

1. Does the description include both generic and subject-specific competences?
2. Are competences defined in a way that both students and staff can understand?
3. Have programme-level learning outcomes been formulated?
4. Are they clear and well formulated with an action verb, content and context?
5. Are they measurable?

#### 4.1. Competences and their learning outcomes

Competencies	Learning outcomes
Competent Medical Practitioner who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.	Ability to apply knowledge in practical situations, make reasoned decisions and practice evidence based medicine
	Elicit, evaluate and interpret patients history, medical records and examination/diagnostic test findings to exclude differential diagnosis
	Perform relevant physical examination and perform basic clinical procedures independently and refer patients for specialized and/or advanced care
Professional who is committed to excellence, is ethical, responsive and accountable to patients community and the profession	Practice professionalism
	Apply ethical and humanitarian principles that influence health care
	Integrate health care policies and guidelines into the routine clinical practice
Leader and member of the health care team and system	Ability to manage crisis and stress effectively, maintain emotional stability and work as a team
	Ability to plan and manage time efficiently
Communicator with patients, families, colleagues and community	Communicate compassionately with patients and care givers
Lifelong learner committed to continuous improvement of skills and knowledge	Ability to be a self-motivated lifelong learner
	Contribute towards the growth of the medical profession
Critical thinker	Ability to do research and be a reflective practitioner
	Acquire problem solving capacity and higher order thinking skill

## 5. Link of competences (degree profile) to the agreed meta-profile

Compare your programme graduate profile with the meta-profile agreed for your subject area, identifying commonalities and differences.

Questions:

1. Is it clear which elements of the degree profile are part of the meta-profile and which are “unique” (related to the context and the institutional identity)?
2. Are the reasons for including additional elements (those related to the context and the institutional identity) stated in the description?
3. If you decided to give more prominence/importance/weight to a certain element of the meta-profile in your programme, have you commented on this and indicated the reasons behind your decision?

Full response must contain:

- A visual output of the matching exercise – the elements of the meta-profile, on the one hand, and competences /PLOs/ courses/papers of your degree, on the other. Can be a drawing, a scheme or a table.
- A couple of sentences clearly stating which elements of your degree profile are part of the meta-profile and which are “unique” – i.e. related to the context and the institutional identity. And for the unique elements – giving the reasons for including these additional elements.
- A comment on the relative importance/attention/weight given in your programme to the different elements (competences/clusters/dimensions/...) of the meta-profile – are they all given equal attention (why?) or are some given more importance/ attention/ weight or vice versa, less weight (in either case – which ones and why).
- If your programme revision was stipulated by discovering that some element of the meta-profile/ some of the competences is/are not given due attention/weight and needs to be reinforced, indicate which one(s) – thus reiterating what has been said in Step 3 about the reason behind and the focus on your redesign work.

*Programme-Level Learning Outcomes (minimum 1 - maximum 3 per competence/ meta-profile element)*

Competence / Meta-profile element and the competences it comprises	Generic or Subject-Specific?	Definition of the competence / the meta-profile element – how is it understood in your programme?	Programme-Level Learning Outcomes (minimum 1 - maximum 3 per competence/ meta-profile element)
1. Competent medical practitioner	Generic	Competent Medical Practitioner who understands and provides preventive, promotive curative, palliative and holistic care with compassion.	LO1. Ability to apply knowledge in practical situations, make reasoned decisions and practice evidence based medicine LO2. Elicit, evaluate and interpret patient's history, medical records and examination/ diagnostic test findings to exclude differential diagnosis LO3. Perform relevant physical examination and perform basic clinical procedures independently and refer patients for specialized and/or advanced care
2. Professional	Generic	Professional who is committed to excellence, is ethical, responsive and accountable to patients community and the profession	LO4. Practice professionalism LO5. Apply ethical and humanitarian principles that influence health care LO6. Integrate health care policies and guidelines into the routine clinical practice
3. Leader	Generic	Leader and member of the health care team and system	LO7. Ability to manage crisis and stress effectively, maintain emotional stability and work as a team LO8. Ability to plan and manage time efficiently
4. Communicator	Generic	Communicates with patients, families, colleagues and community	LO9. Communicate compassionately with patients and care givers

Competence / Meta-profile element and the competences it comprises	Generic or Subject-Specific?	Definition of the competence / the meta-profile element – how is it understood in your programme?	Programme-Level Learning Outcomes (minimum 1 - maximum 3 per competence/ meta-profile element)
5. Critical thinker	Generic	Ability to do research, be a reflective practitioner by acquiring problem solving capacity and higher order thinking skill	LO10. Ability to do research and be a reflective practitioner LO11. Acquire problem solving capacity and higher order thinking skill
6. Lifelong learner	Generic	Lifelong learner committed to continuous improvement of skills and knowledge	LO12. Ability to be a self-motivated life-long learner LO13. Contribute towards the growth of the medical profession

## 6. Structure of the programme: units/courses/modules with their learning outcomes and learning, teaching and assessment strategies

List the courses/modules/units that make up the programme; for each of the courses/modules/units, indicate its intended learning outcomes (in third singular person), as well as teaching, learning and assessment strategies used to ensure that students achieve the unit learning outcomes. Check the alignment within each unit. Questions:

1. Is there a list of the courses/papers that make up the programme?
2. Is information about intended learning outcomes and teaching, learning and assessment strategies provided for each course?
3. Are teaching and learning activities appropriate for the learning outcomes of each course?
4. Can the assessment methods used in each course (a) promote and (b) measure the achievement of all the course learning outcomes?

5. Are course-level learning outcomes, teaching and learning activities and assessment tasks aligned logically?
6. Is there a general balance (no excessive repetition or excessive variety) in teaching, learning and assessment strategies across the different programme courses?

Full response must contain:

- List of all units/modules/courses that constitute the programme you are focusing on
- Course Learning Outcomes for each unit/module/course
- Brief description for Teaching, Learning and Assessment (TLA) activities for each unit/module/course
- More detail on TLA for the courses where the competences you focus on are addressed and the units/modules/courses whose “implementation” in the revised version you will be monitoring

Course/paper (name and code)	Course/paper learning outcomes	Learning and teaching activities related to each course/paper learning outcome	Assessment activities (formative and summative) related to each course/paper learning outcome
1. Human Anatomy	<p>AN1: Demonstrate understanding of the gross and microscopic structure and development of human body.</p> <p>AN2. Demonstrate comprehension of the normal regulation and integration of the functions of the organs and systems on basis of the structure and genetic pattern.</p> <p>AN3. Demonstrate understanding of the clinical correlation of the organs and structures involved and interpret the anatomical basis of the disease presentations.</p>	Didactic lecture, dissection practical classes and small group teaching	Written exam Practical exam Viva voce
2. Physiology	<p>PY1. Demonstrate understanding of the normal functioning of the organs and organ systems of the body,</p> <p>PY2. Demonstrate comprehension of the normal structure and organization of the organs and systems on basis of the functions.</p> <p>PY3. Understanding of age-related physiological changes in the organ functions that reflect normal growth and development,</p> <p>PY4. Understand the physiological basis of diseases.</p>	Didactic lecture, practical classes and small group teaching	Written exam Practical exam Viva voce
3. Biochemistry	<p>B11. Demonstrate understanding of biochemical and molecular processes involved in health and disease</p> <p>B12. Demonstrate knowledge of importance of nutrition in health and disease,</p> <p>B13. Demonstrate understanding of biochemical basis and rationale of clinical laboratory tests, and demonstrate ability to interpret these in the clinical context.</p>	Didactic lecture, practical classes and small group teaching	Written exam Practical exam Viva voce

Course/paper (name and code)	Course/paper learning outcomes	Learning and teaching activities related to each course/paper learning outcome	Assessment activities (formative and summative) related to each course/paper learning outcome
4. Pathology	PA1. Comprehension of the causes, evolution and mechanisms of diseases, PA2. Knowledge of alterations in gross and cellular morphology of organs in disease states, PA3. Ability to correlate the natural history, structural and functional changes with the clinical manifestations of diseases, their diagnosis and therapy,	Didactic lecture, practical classes and small group teaching	Written exam Practical exam Viva voce
5. Microbiology	MI1. Demonstrate understanding of role of microbial agents in health and disease MI2. Demonstrate understanding of the immunological mechanisms in health and disease MI3. Demonstrate ability to correlate the natural history, mechanisms and clinical manifestations of infectious diseases as they relate to the properties of microbial agents, MI4. Demonstrate knowledge of the principles and application of infection control measures MI5. Demonstrate understanding of the basis of choice of laboratory diagnostic tests and their interpretation, antimicrobial therapy, control and prevention of infectious diseases.	Didactic lecture, practical classes and small group teaching	Written exam Practical exam Viva voce

Course/paper (name and code)	Course/paper learning outcomes	Learning and teaching activities related to each course/paper learning outcome	Assessment activities (formative and summative) related to each course/paper learning outcome
6. Pharmacology	<p>PH1: Demonstrate knowledge about essential and commonly used drugs and an understanding of the pharmacologic basis of therapeutics.</p> <p>PH2. Demonstrate ability to select and prescribe medicines based on clinical condition and the pharmacologic properties, efficacy, safety, suitability and cost of medicines for common clinical conditions of national importance.</p> <p>PH 3. Demonstrate knowledge of pharmacovigilance, essential medicine concept and sources of drug information and industry-doctor relationship,</p> <p>PH 4. Demonstrate ability to counsel patients regarding appropriate use of prescribed drug and drug delivery systems.</p>	Didactic lecture, practical classes and small group teaching	Written exam Practical exam Viva voce
7. Forensic Medicine	<p>FM1. Demonstrate understanding of medico-legal responsibilities of physicians in primary and secondary care settings.</p> <p>FM2. Demonstrate understanding of the rational approach to the investigation of crime, based on scientific and legal principles.</p> <p>FM3. Demonstrate ability to manage medical and legal issues in cases of poisoning / overdose,</p> <p>FM4. Demonstrate understanding the medico-legal framework of medical practice and medical negligence,</p> <p>FM5. Demonstrate understanding of codes of conduct and medical ethics.</p>	Didactic lecture, practical classes and small group teaching	Written exam Practical exam Viva voce

Course/paper (name and code)	Course/paper learning outcomes	Learning and teaching activities related to each course/paper learning outcome	Assessment activities (formative and summative) related to each course/paper learning outcome
8. Otorhinolaryngology	<p>EN1. Demonstrate knowledge of the common Otorhinolaryngological (ENT) emergencies and problems,</p> <p>EN2. Demonstrate ability to recognize, diagnose and manage common ENT emergencies and problems in primary care setting,</p> <p>EN3. Demonstrate ability to perform simple ENT procedures as applicable in a primary care setting,</p> <p>EN4. Demonstrate ability to recognize hearing impairment and refer to the appropriate hearing impairment rehabilitation programme.</p>	Didactic lecture, clinical classes and small group teaching	Written exam Clinical exam Viva voce
9. Ophthalmology	<p>OP1. Demonstrate knowledge of common eye problems in the community</p> <p>OP2. Recognize, diagnose and manage common eye problems and identify indications for referral,</p> <p>OP3. Demonstrate ability to recognize visual impairment and blindness in the community and implement National programmes as applicable in the primary care setting.</p>	Didactic lecture, clinical classes and small group teaching	Written exam Clinical exam Viva voce

Course/paper (name and code)	Course/paper learning outcomes	Learning and teaching activities related to each course/paper learning outcome	Assessment activities (formative and summative) related to each course/paper learning outcome
10. Community Medicine	<p>CM1. Demonstrate understanding of physical, social, psychological, economic and environmental determinants of health and disease.</p> <p>CM2. Demonstrate ability to recognize and manage common health problems including physical, emotional and social aspects at individual family and community level in the context of National Health Programmes.</p> <p>CM3. Demonstrate ability to Implement and monitor National Health Programmes in the primary care setting.</p> <p>CM4. Demonstrate knowledge of maternal and child wellness as they apply to national health care priorities and programmes.</p> <p>CM5. Demonstrate ability to recognize, investigate, report, plan and manage community health problems including malnutrition and emergencies.</p>	Didactic lecture, practical classes, community visits, clinical classes and small group teaching	Written exam Practical exam Viva voce

Course/paper (name and code)	Course/paper learning outcomes	Learning and teaching activities related to each course/paper learning outcome	Assessment activities (formative and summative) related to each course/paper learning outcome
11. Gen Medicine	<p>IM1. Demonstrate understanding of the patho-physiologic basis, epidemiological profile, signs and symptoms of disease and their investigation and management,</p> <p>IM2. Competently interview and examine an adult patient and make a clinical diagnosis,</p> <p>IM3. Appropriately order and interpret laboratory tests,</p> <p>IM4. Initiate appropriate cost-effective treatment based on an understanding of the rational drug prescriptions, medical interventions required and preventive measures,</p> <p>IM 5. Follow up of patients with medical problems and refer whenever required,</p> <p>IM 6. Communicate effectively, educate and counsel the patient and family,</p> <p>IM7. Manage common medical emergencies and refer when required,</p> <p>IM8. Independently perform common medical procedures safely and understand patient safety issues.</p>	Didactic lecture, clinical classes and small group teaching	Written exam Clinical exam Viva voce

Course/paper (name and code)	Course/paper learning outcomes	Learning and teaching activities related to each course/paper learning outcome	Assessment activities (formative and summative) related to each course/paper learning outcome
12. Gen. Surgery	<p>SU1. Demonstrate understanding of the structural and functional basis, principles of diagnosis and management of common surgical problems in adults and children,</p> <p>SU2. Demonstrate ability to choose, calculate and administer appropriately intravenous fluids, electrolytes, blood and blood products based on the clinical condition,</p> <p>SU3. Demonstrate ability to apply the principles of asepsis, sterilization, disinfection, rational use of prophylaxis, therapeutic utilities of antibiotics and universal precautions in surgical practice,</p> <p>SU4. Demonstrate knowledge of common malignancies in In-dia and their prevention, early detection and therapy,</p> <p>SU5. Demonstrate ability to perform common diagnostic and surgical procedures at the primary care level,</p> <p>SU6. Demonstrate ability to recognize, resuscitate, stabilize and provide Basic &amp; Advanced Life Support to patients following trauma,</p> <p>SU7. Demonstrate ability to administer informed consent and counsel patient prior to surgical procedures,</p> <p>SU8. Demonstrate commitment to advancement of quality and patient safety in surgical practice.</p>	Didactic lecture, clinical classes and small group teaching	Written exam Clinical exam Viva voce

Course/paper (name and code)	Course/paper learning outcomes	Learning and teaching activities related to each course/paper learning outcome	Assessment activities (formative and summative) related to each course/paper learning outcome
13. Paediatrics	<p>PE1. Demonstrate ability to assess and promote optimal growth, development and nutrition of children and adolescents and identify deviations from normal,</p> <p>PE2. Demonstrate ability to recognize and provide emergency and routine ambulatory and First Level Referral Unit care for neonates, infants, children and adolescents and refer as may be appropriate,</p> <p>PE3. Demonstrate ability to perform procedures as indicated for children of all ages in the primary care setting,</p> <p>PE4. Demonstrate ability to recognize children with special needs and refer appropriately,</p> <p>PE5. Demonstrate ability to promote health and prevent diseases in children,</p> <p>PE6. Demonstrate ability to participate in National Programmes related to child health and in conformation with the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) Strategy,</p> <p>PE7. Demonstrate ability to communicate appropriately and effectively.</p>	Didactic lecture, clinical classes and small group teaching	Written exam Clinical exam Viva voce

Course/paper (name and code)	Course/paper learning outcomes	Learning and teaching activities related to each course/paper learning outcome	Assessment activities (formative and summative) related to each course/paper learning outcome
14. Obstetrics and Gynaecology	<p>OG1. Demonstrate ability to Provide peri-conceptual counselling and antenatal care,</p> <p>OG2. Identify high-risk pregnancies and refer appropriately,</p> <p>OG3. Conduct normal deliveries, using safe delivery practices in the primary and secondary care settings,</p> <p>OG4. Prescribe drugs safely and appropriately in pregnancy and lactation,</p> <p>OG5. Diagnose complications of labor, institute primary care and refer in a timely manner,</p> <p>OG6. Perform early neonatal resuscitation,</p> <p>OG7. Provide postnatal care, including education in breastfeeding,</p> <p>OG8. Counsel and support couples in the correct choice of contraception,</p>	Didactic lecture, clinical classes and small group teaching	Written exam Clinical exam Viva voce

Course/paper (name and code)	Course/paper learning outcomes	Learning and teaching activities related to each course/paper learning outcome	Assessment activities (formative and summative) related to each course/paper learning outcome
15. Orthopedics	<p>OR1. Demonstrate ability to recognize and assess bone injuries, dislocation and poly-trauma and provide first contact care prior to appropriate referral,</p> <p>OR2. Demonstrate knowledge of the medico-legal aspects of trauma,</p> <p>OR3. Demonstrate ability to recognize and manage common infections of bone and joints in the primary care setting,</p> <p>OR4. Recognize common congenital, metabolic, neoplastic, degenerative and inflammatory bone diseases and refer appropriately,</p> <p>OR5. Demonstrate ability to perform simple orthopaedic techniques as applicable to a primary care setting,</p> <p>OR6. Demonstrate ability to recommend rehabilitative services for common orthopaedic problems across all ages.</p>	Didactic lecture, clinical classes and small group teaching	Written exam Clinical exam Viva voce
16. T.B. and Chest	<p>CT1. Demonstrate knowledge of common chest diseases, their clinical manifestations, diagnosis and management,</p> <p>CT2. Demonstrate ability to recognize, diagnose and manage pulmonary tuberculosis as contemplated in National Tuberculosis Control programme,</p> <p>CT3. Demonstrate ability to manage common respiratory emergencies in primary care setting and refer appropriately.</p>	Didactic lecture, clinical classes and small group teaching	Written exam Clinical exam Viva voce

Course/paper (name and code)	Course/paper learning outcomes	Learning and teaching activities related to each course/paper learning outcome	Assessment activities (formative and summative) related to each course/paper learning outcome
17. Psychiatry	<p>PS1. Demonstrate ability to promote mental health and mental hygiene,</p> <p>PS2. Demonstrate knowledge of etiology (bio-psycho-social-environmental interactions), clinical features, diagnosis and management of common psychiatric disorders across all ages,</p> <p>PS3. Demonstrate ability to recognize and manage common psychological and psychiatric disorders in a primary care setting, institute preliminary treatment in disorders difficult to manage, and refer appropriately,</p> <p>PS4. Demonstrate ability to recognize alcohol/ substance abuse disorders and refer them to appropriate centers,</p> <p>PS5. Demonstrate ability to assess risk for suicide and refer appropriately,</p> <p>PS6. Demonstrate ability to recognize temperamental difficulties and personality disorders,</p> <p>PS7. Assess mental disability and rehabilitate appropriately,</p> <p>PS8. Demonstrate understanding of National and State programmes that address mental health and welfare of patients and community.</p>	Didactic lecture, clinical classes and small group teaching	Written exam Clinical exam Viva voce

Course/paper (name and code)	Course/paper learning outcomes	Learning and teaching activities related to each course/paper learning outcome	Assessment activities (formative and summative) related to each course/paper learning outcome
18. Skin and STD	<p>DR1. Demonstrate understanding of the principles of diagnosis of diseases of the skin, hair, nail and mucosa,</p> <p>DR2. Demonstrate ability to recognize, diagnose, order appropriate investigations and treat common diseases of the skin including leprosy in the primary care setting and refer as appropriate,</p> <p>DR3. Demonstrate a syndromic approach to the recognition, diagnosis, prevention, counseling, testing and management of common sexually transmitted diseases including HIV based on national health priorities,</p> <p>DR4. Demonstrate ability to recognize and treat emergencies including drug reactions and refer as appropriate.</p>	Didactic lecture, clinical classes and small group teaching	Written exam Clinical exam Viva voce

Course/paper (name and code)	Course/paper learning outcomes	Learning and teaching activities related to each course/paper learning outcome	Assessment activities (formative and summative) related to each course/paper learning outcome
19. Anaesthesia	<p>AS1. Describe and discuss the pre-operative evaluation, assessing fitness for surgery and the modifications in medications in relation to anaesthesia / surgery,</p> <p>AS2. Describe and discuss the roles of Anaesthesiologist as a peri-operative physician including pre-medication, endotracheal intubation, general anaesthesia and recovery (including variations in recovery from anaesthesia and anaesthetic complications),</p> <p>AS3. Describe and discuss the management of acute and chronic pain, including labour analgesia,</p> <p>AS4. Demonstrate awareness about the maintenance of airway in children and adults in various situations,</p> <p>AS5. Demonstrate the awareness about the indications, selection of cases and execution of cardiopulmonary resuscitation in emergencies and in the intensive care and high dependency units,</p> <p>AS6. Choose cases for local / regional anaesthesia and demonstrate the ability to administer the same,</p> <p>AS7. Discuss the implications and obtain informed consent for various procedures and to maintain the documents.</p>	Didactic lecture, clinical classes and small group teaching	Written exam Clinical exam Viva voce

Course/paper (name and code)	Course/paper learning outcomes	Learning and teaching activities related to each course/paper learning outcome	Assessment activities (formative and summative) related to each course/paper learning outcome
20. Radiodiagnosis & Radiotherapy	<p>RA1. Demonstrate understanding of indications for various radiological investigations in common clinical practice,</p> <p>RA2. Demonstrate awareness of the ill effects of radiation and various radiation protective measures to be employed,</p> <p>RA3. Demonstrate ability to identify abnormalities in common radiological investigations.</p> <p>RT1. Demonstrate understanding of clinical presentations of various cancers,</p> <p>RT2. Demonstrate understanding of appropriate treatment modalities for various types of malignancies,</p> <p>RT3. Demonstrate understanding of principles of radiotherapy and techniques.</p>	Didactic lecture, clinical classes and small group teaching	Written exam Clinical exam Viva voce
21. Foundation course	<p>FC1 Demonstrate familiarity with the program, profession, institution, health care system, ethics and professional conduct</p> <p>FC2 Demonstrate ability to provide first aid and Basic life support</p> <p>FC3 Demonstrate familiarity with organisational skills, IT skill, language and communication skills needed in the program</p>	Lectures, small group discussions, workshops, field visits.	Reflective writing, log book, OSPE

Course/paper (name and code)	Course/paper learning outcomes	Learning and teaching activities related to each course/paper learning outcome	Assessment activities (formative and summative) related to each course/paper learning outcome
22. AETCOM	<p>AE1. Demonstrate the ability to apply principles of bioethics and law as they apply to medical practice and Research</p> <p>AE2 Demonstrate the ability to understand and apply the principles of system based care as they relate to the care of the patient,</p> <p>AE3 Demonstrate the ability to understand and apply empathy and other human values to the care of the patient,</p> <p>AE4 Demonstrate the ability to communicate effectively with patients, families, colleagues and other health care professionals,</p> <p>AE5 Demonstrate the ability to understand the strengths and limitations of alternative systems of medicine,</p> <p>AE6 Demonstrate the ability to respond to events and issues in a professional, considerate and humane fashion,</p> <p>AE7 Demonstrate the ability to translate learning from the humanities in order to further his / her professional and personal growth.</p>	<p>small group discussions, patient care scenarios, workshop, seminars, role plays, lectures</p>	<p>Written exam Clinical exam Viva voce reflective writing</p>
23. Early Clinical exposure	<p>ECE1 Demonstrate the ability to understand the relevance of basic sciences in diagnosis, patient care and treatment,</p> <p>ECE2 Demonstrate the ability to relate to experience of patients as a motivation to learn,</p> <p>ECE3 Demonstrate ability to recognize attitude, ethics and professionalism as integral to the doctor-patient relationship,</p> <p>ECE4 Demonstrate ability to understand the socio-cultural context of disease through the study of humanities.</p>	<p>Clinical charts, case discussions, hospital visits</p>	<p>Written exam Clinical exam Viva voce, reflective writing</p>

Course/paper (name and code)	Course/paper learning outcomes	Learning and teaching activities related to each course/paper learning outcome	Assessment activities (formative and summative) related to each course/paper learning outcome
24. Concepts of Basic Medical Research	<p>BMR 1 Demonstrate the understanding of basic concepts of medical research</p> <p>BMR 2 Demonstrate the ability to critically review the journal article by applying the basic concepts of research</p> <p>BMR 3 Demonstrate ability plan, execute and report a research project</p> <p>BMR 4 Demonstrate the qualities of an ethical researcher and lifelong learner</p>	<p>Lectures, group discussions, group activities, Journal reading, Hands-on, Project, Reflective writing</p>	<p>Participation in group activities, Written exam, protocol writing, research project, Reflective writing</p>

## 7. Length of the programme and student workload

Define and indicate the length of the programme; indicate the number of hours (in class and outside the classroom) for each unit/module in the programme. Questions:

1. Is it clear what length of the programme is?
2. Has the number of hours (in class and outside the classroom) for each course/unit/module in the programme been indicated?
3. Has the teacher's perspective been contrasted with the students?

The length of the module in the program will be of a total of 100 hours of which 32 hours are in- class and 68 hours outside classroom. The split up will be as follows, during

Foundation course: 6 hrs in- Class and 10 hrs outside classroom – Unit 1

Phase 1 MBBS: 6 hrs in- class and 10 hrs outside classroom- Unit 2

Phase 2 MBBS: 8 hrs in- class and 20 hrs outside classroom- Unit 3

Phase 3 MBBS: 12 hrs in- class and 28 hrs outside classroom Unit4

On successful completion of the module, certificates will be awarded to the students.

## 8. Overall consistency of the programme

Check the programme overall consistency (both at the unit level and at the inter-unit/programme level). Questions:

1. Does each course contribute to the achievement of **at least one programme-level learning outcome**?
2. Are all of the programme-level **learning outcomes covered** in the courses of the programme?
3. Is there a **progression and coordination** of course learning outcomes towards the development of each programme-level learning outcome / each competence of the graduate profile?
4. Is each programme-level learning outcome addressed **in enough programme courses** to be achieved by students?



## 9. Internal Quality Control/Enhancement

State how internal quality control will be carried out and the improvements identified as necessary will be incorporated. Questions:

1. How will feedback on the new/revised curriculum (on the effectiveness of the changes introduced and the overall consistency of the programme) be obtained and from whom?
2. Who will be involved in analysing feedback and deciding on the improvements necessary?
3. How will such improvements be implemented and their success monitored?
4. How will internal unit and programme level quality control procedures be coordinated?

Feedback will be collected from faculty involved in teaching the module and the students in online feedback system. The module coordinator will analyze and make necessary changes time to time and with approval of curriculum committee will implement the changes. The number of students expressing interest to take up research projects, completed student research projects in an academic year, the number of conference presentations and the number of scientific publications resulting from the student research projects, will help monitor the success of the module implementation. Half yearly reports will be submitted to the curriculum committee, research committee and Internal Quality Assurance Cell of the institution which will monitor and coordinate the quality control.

## 10. Other relevant aspects

Add information on any other aspects of your institution and/or accreditation body requires for a programme (re)design proposal to be considered for approval. Questions:

1. Have you included information on all the other aspects your institution and/or accreditation body requires for a programme (re) design proposal to be considered for approval?

Institutional Curriculum committee and University senate approval to implement the re-designed curriculum

# 7

## Students' Learning Guide

### 1. Introduction to the subject

#### 1.1. Lecturer's contact details (Coordinator)

**KMC Manipal:**

Dr Shankar Bakannavar

Associate Professor

Dept of Forensic Medicine

Kasturba Medical College, Manipal

0820-2922365

**KMC Mangalore:**

Dr. Animesh Jain

Professor

Department of Community Medicine

Kasturba Medical College, Mangalore

0824- 2244721

#### 1.2. Contribution to the degree profile

The Indian undergraduate curriculum is revised in 2019 and the goal of the graduate to create physician of first contact in the Indian context while being globally relevant. To be globally competent, it is imperative that they possess skills to critically appraise research papers in addition to excellence in academics, since evidence based medicine is propagated all over the globe. This skill of evidence gathering will be honed by initiating a student early into research. The Training in research will further, a trainee's critical thinking skills, problem solving capacity and enable them to make informed judgement for the best possible care of their patients.

Moreover, stimulating the students early into research will help them inculcate the qualities to be a lifelong learner, a defined role of an Indian Medical Graduate.

The revised curriculum has introduced some standalone concepts of research under different courses; however, this aspect has not been described in detail. Hence the need for this complete module of concepts of Basic medical research.

### 1.3. *Competences to be developed*

#### Competence 5

Ability to do research, be a reflective practitioner by acquiring problem solving capacity and higher order thinking skill

BMR 1 Demonstrate the understanding of basic concepts of medical research

BMR 2 Demonstrate the ability to critically review the journal article by applying the basic concepts of research

BMR 3 Demonstrate ability to plan a research project

#### Competence 6

Lifelong learner committed to continuous improvement of skills and knowledge.

BMR 4 Demonstrate the qualities of an ethical researcher and lifelong learner.

## 2. Student work plan

### 2.1. Distribution of activities and workload

Competence	Contents	Activities-Resources-Documentation	Estimated work time		Completion and/or submission deadlines
			Contact hours	Independent work	
<b>Competence 5</b> <b>Ability to do research, be a reflective practitioner by acquiring problem solving capacity and higher order thinking skill</b>  BMR 1 Demonstrate the understanding of basic concepts of medical research.	<b>Unit 1: Basics of Research-1 (during foundation course)</b>  1. Introduction to research  2. How to frame a research question  3. Research methodologies  4. Research supporting agencies	<b>Lecture</b>  <b>Lecture and SGT, group work</b>  <b>Lecture</b>  <b>Small group discussions</b>	1 hour	1.5 hours	
			1 hour 30 min	2.5 hours	
			1 hour 30 min	2 hours	
			2 hours	4 hours	
	Total		6 hours	10 hours	

Competence	Contents	Activities-Resources-Documentation	Estimated work time		Completion and/or submission deadlines
			Contact hours	Independent work	
BMR 2 Demonstrate the ability to critically review the journal article by applying the basic concepts of research	<b>Unit 2: Basics of Research-2 (During MBBS Phase 1)</b>				
	1. Basics of Protocol writing	<b>Lecture</b>	1 hour	1.5 hours	
	2. Literature review				
	3. Informed consent & Participant information sheet	<b>Lecture and hands on</b>	1hours	2 hours	
	4. Research ethics – GCP, ICMR	<b>Lecture and hands-on exercise</b>	1.5 hour	2 hours	
	5. Critical review of a journal article	<b>Lecture and group discussions</b>	1 hour	1.5 hours	
	Total	<b>Group activity</b>	6 hours	10 hours	
	Evaluation	Case based multiple choice questions			<b>Within One week of last session of Unit 2</b>

Competence	Contents	Activities-Resources-Documentation	Estimated work time		Completion and/or submission deadlines
			Contact hours	Independent work	
BMR 3 Demonstrate ability to plan a research project	<b>Unit 3: Plan for a project (During MBBS phase 2)</b>				
	1. Writing a project Protocol	<b>Lecture and group activities</b>	2 hours	4 hours	
	2. literature search and reference writing	<b>hands-on exercise for literature search, reference writing and sampling/sample size.</b>	2 hours	6 hours	
	3. Sampling methods and sample size		2 hours	46 hours	
	4. Application to ethics committee	<b>Group activity</b>	2 hours	4 hours	
	Total		8 hours	20 hours	
	Evaluation	Submission of protocol to ethics committee			Within 15 days of the last session of Unit 3

Competence	Contents	Activities-Resources-Documentation	Estimated work time		Completion and/or submission deadlines
			Contact hours	Independent work	
Competence 6 Lifelong learner committed to continuous improvement of skills and knowledge	<b>Unit 4: Project work (During MBBS phase 3)</b> 1. Project implementation- data collection and data entry 2. Basics of statistics and statistical analysis of data 3. Interpretation of data 4. How to write a paper 5. Publication ethics 6. Plagiarism 4. Journal articles – critical appraisal	<b>Group project (max 7 students in a group)</b> <b>Group activities</b>	-----  2 hours 2hours 4 hours  2 hours 2 hours	10 hours  4 hours 4 hours 7 hours 2 hours 1 hours	
			12 hours	28 hours	
	Evaluation	Submission Final project and reflective writing			Within 45 days of last session of unit 4
	Total hours for the entire module		32 hours	68 hours	100 hours
<b>Total</b>			<b>32%</b>	<b>68%</b>	<b>100%</b>

## 2.2. Summary

Type of activities	Contact hours	Independent work	Total
Theoretical learning	10 hours	20 hours	30 hours
Practical activities and assessment	22 hours	48 hours	70 hours
<i>Total</i>	32 hours	68 hours	100 hours

## 3. Assessment system

### 3.1. Table of assessment

Competence	Assessment technique	Grade
<b>Competence 5</b> Ability to do research, be a reflective practitioner by acquiring problem solving capacity and higher order thinking skill BMR 1 Demonstrate the understanding of basic concepts of medical research BMR 2 Demonstrate the ability to critically review the journal article by applying the basic concepts of research BMR 3 Demonstrate ability execute a research project	Group participation Case based MCQs Protocol assessment	30 marks 20 marks 40 marks
<b>Competence 6</b> Lifelong learner committed to continuous improvement of skills and knowledge BMR 4 Demonstrate the qualities of an ethical researcher and lifelong learner	Group participation Project Assessment Project guides assessment Reflective writing assessment by guide	20 marks 60 marks 10 marks 20 marks

### 3.2. Observations of assessment

Participation in any two group activity will be assessed by the facilitator. Each activity will fetch a max of 10 marks.

Securing 35% for each Competence is mandatory.

### 3.3. Summary of assessment

Competence	Continuous assessment	Final assessment	Total
Competence 5	<b>15 (participation in group activities )</b>	<b>30 (MCQ test 10 and Protocol evaluation 20)</b>	<b>45</b>
Competence 6	<b>15 (Group participation 10 and project guide's assessment 5)</b>	<b>40 (Reflective writing assessment 10 and project evaluation 30)</b>	<b>55</b>
<b>Total</b>	<b>30</b>	<b>70</b>	<b>100</b>
Total	30%	70%	100%

Grade A - 90% and above

Grade B - 75 % - 89%

Grade C - 60% - 74%

Grade D- 45% - 59%

Grade E- 35% - 44%

Grade F- 34% and below

**Completion certificates with grades specified will be awarded to students securing Grade A- Grade E.**

# 8

## Implementation at PSG Institute of Medical Sciences and Research

Knowledge and Skills in Humanities, Ethics Morals and Attitude

(KSHEMA In Indian language means safety, wellness)

Students' Learning Guide

### 1. Introduction to the Subject

Medical humanities (MH) can be defined as the application of the techniques of the traditional humanities fields to medical practice

#### 1.1. *Lecturer's contact details*

**Dr. Sudha Ramalingam**

Director Research and Innovation

Professor and Head

Community Medicine

PSG Institute of Medical Sciences and Research

Coimbatore

**Dr G Sumitra**

Academic Officer

Associate professor

Biochemistry

PSG Institute of Medical Sciences and Research

Coimbatore

## 1.2. *Contribution to the degree profile*

The doctor-patient relationship remains the cornerstone of healthcare. It is the medium in which data are gathered, diagnoses and plans are made, compliance is accomplished, healing and support are provided. Studying humanities, can train the medical students in narrative, attention, observation, historical perspective, ethics, judgment, and creativity in addition to developing empathy. All this will help in the practice of holistic medicine by increased appreciation for other's perspectives, broaden your perspective fostering tolerance and empathy, establish better therapeutic relationship with patients and increase confidence when dealing with uncertainty. This may also help the future health care provider by increasing self awareness and preventing burnouts.

## 1.3. *Competences to be developed*

### Specific Competences

- Apply ethical and humanitarian principles that influence health care
- Apply ethical principles under special circumstances

### Generic Competences

- Be socially responsible and humane
- Practice professionalism

## 2. **Student Work Plan**

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### 2.1. *Distribution of activities and workload*

<b>Competence</b>	<b>Contents</b>	<b>Activities-Resources</b>	<b>Documentation</b>	<b>Estimated work time</b>	<b>Completion and/or submission deadlines</b>
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<b>Contact hours</b>	<b>Independent work</b>
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## Generic competence 1

- Be socially responsible and humane
- History of Medicine
- Human values and practice of medicine
- Health vs illness
- Social; determinants of health
- Death and Dying - concepts
- Gender sensitivity
- Culture sensitivity
- Disability competency Lecture
- Group discussion/debates
- Videos
- Experience sharing
- Field visit and Reflective writing -**1 12 hrs 4 hr Phase I week 1**

## Specific competence 1

- Apply ethical and humanitarian principles that influence health care
- Introduction to medical humanities
- Empathy in health care-primer and need
- Fine arts in health and healing
- Compassionate care
- Expressing altruism
- Lectures
- Movie critiquing
- Videos
- Fine arts assignment -2b
- **8 Hrs 16 hrs Phase 1 Week 1**

### Specific competence 1 ctd..

- Apply ethical and humanitarian principles that influence health care
- Basic principles of medical ethics: respect to others
- Confidentiality
- Conflict of Interest vulnerability informed consent Religious beliefs, human values and customs in the context of healthcare Lectures
- Case scenario discussions-blogs- 2a
- Role play
- Experience sharing by medical practitioners, theatre, story telling **8 hrs 16 hrs Phase II Week 1-4**

### Generic competence 2

- Practice professionalism
- Introduction to clinical ethics
- Doctor-patient relationship
- Doctor Pharmaceutical relationship
- Lectures
- Role play
- Group discussions
- Case scenarios
- Experience sharing
- Assignment- 3 **8hrs 16 hrs Phase 2 Week 5-8**

## Specific competence 2

- Apply ethical principles under special circumstances
- Euthanasia
- Ethical issues in genetic testing
- Understanding vulnerability in the context of Social determinants of health
- Public health ethics – Concepts
- Ethical issues in Assisted Reproductive Technology
- Ethical issues with animal experimentation
- Ethical issues in Clinical research Movie critique on genetic testing
- Lecture
- **4 hrs 4 hrs Week 9-10**

**Total** 40 hrs (i.e. no more than 1/3) 56 (i.e. up to 2/3)

### 2.2. Summary

Type of activities	Contact hours	Independent work	Total
Theoretical learning	20	20	40
Practical activities and assessment	20	36	56
<b>Total</b>	<b>40</b>	<b>56</b>	<b>96</b>

## 3. Assessment System

### 3.1. Table of assessment

#### Competence Assessment technique Grade

Generic competence 1

Be socially responsible and humane

## Learning Outcomes

- LO1. Demonstrate problem solving skills as regards to resolution of human values dilemmas presented to them
- LO2. Demonstrate empathy. Demonstrate empathy using one fine art skill (Art, photography, poetry or essay)

## Participation in group discussion

## Assignment

Generic competence 2

Practice professionalism

## Learning Outcomes

- LO1. Demonstrate academic integrity
- LO2. Adhere to the professional code of conduct LO3.

## Assignment

Written test- Essays, Short notes, MCQs

Specific competence 1

Apply ethical and humanitarian principles that influence health care

## Learning Outcome

# 9

## Implementing universities Conclusions. Final considerations

### Implementing universities

- King George's Medical University
- Manipal Academy of Higher Education
- PSG Institution of Medical Sciences and Research
- GD Goenka University
- M.S. Ramaiah Medical College

### Conclusions. Final Considerations

The Tuning India program has brought in standardization and consistency towards developing and implementing need based curricular degree programs catering to the generic and subject specific competencies in health science courses. The degree programs evolved through the Tuning methodology provide a tested framework for the implementing institutions for offering the programs to students. The recently introduced competency based medical education program has reoriented the medical education in India. The regulatory body, National

Medical Commission (NMS) emphasizes that the core competencies should be demonstrated by the medical graduates at the successful completion of the course.

In this context, the newer degree programs developed as a part of the Tuning India projects has been successful in supplementing and complementing the National needs of the medical graduates in achieving those competencies in a comprehensive manner. The methodology refined through the Tuning India Program is going to help the institutions for developing further courses.

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