



Fundamentals of teaching activities (Guide for DTMU teaching staff)

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Purpose of teaching staff guide

1. To provide teachers with an understanding of the activities that are expected of them, depending on their task(s);
2. To provide a road map for teachers to guide their continuing professional development;
3. To assist programs, departments and faculty members in developing curricula for faculty development;
4. To provide an organizational framework for faculty development materials, tools and strategies.

Using of guide

Individual teachers

Individual teachers may use this guide to identify teaching tasks and activities that are already engaged in or that they are interested in undertaken. The guide clarifies the tasks and expected activities involved in teaching and allows teachers to understand the range of opportunities available to them, the developmental trajectory can help teachers build on their present activities in their own professional development.

Program and faculty developers

Those who support education programs and provide faculty development including MEC to teachers may use it to identify, organize and develop needed programs, resources and tools. Curricula for different aspects of teaching may be developed and implemented based on the needs of the teachers and educational programs.

Individual teachers can be supported in developing and implementing their individual learning plans. To assist with faculty development in teaching skills, the Medical Education Center (MEC) supports the implementation of the framework and is facilitating the collection and listing of related tools and resources.

Faculty Development activities: A model

Teachers are motivated to enhance their teaching competencies but need a variety of opportunities and effective methods that complement their busy schedules. The following diagram may be helpful when considering faculty development:

Faculty development Approach

	Individual	Group
Formal	Using feedback/teacher assessment; Online programs; Peer coaching.	Workshops; Rounds; Courses; Other certified programs.
 Mentorship		
Informal	Self-reflection; learning by observing; Reading.	Communities of practice; Meetings; Discussion groups; Work-based learning.

Workshops and courses (formal group activities) are traditional way to deliver faculty development, other methods are being recognized as effective and useful. Work-based, informal group learning in certainly a common way that teachers learn how to teach (learning on the job from their peers) increasingly, teachers are seeking online resources (informal, individual) or taking online courses (formal, individual) MEC support teachers meeting together to discuss common activities and issues and to share ideas and tools (informal, group).

By providing an outline of what teachers actually do, this guide facilitates the development of learning plans and curricula for themselves. The diversity of teaching contexts and needs of teachers require an extremely broad approach to their faculty development. Including both formal and informal learning, individual and group work.

Setting the context of academic practice

The roles of those who teach in higher education are complex and multifaceted. Teaching is recognized as being only one of the roles that readers of this guide will be undertaking. It recognizes and acknowledges that academics have obligations to pursue excellence in several directions, most notably in teaching, research and scholarship, supervision, academic administration and management, and provision of service in a profession. Academic practice is a term that encompasses all these facets.

Depending of interest, role and carrier stage teacher in DTMU may be engaged in one or two or all three of following teaching roles:

- **Clinical teacher (preceptor):** the teaches working with students (learners) in the clinical setting, where patient case is being provided;
- **Teaches outside the clinical setting:** the teaches providing small or large-group teaching sessions such as tutorials, seminars, lectures, rounds, simulations, or other teaching outside the direct delivery of patient care;
- **Educational leader:** the teacher functioning as an educational program/curriculum planner or administrator for teachers, faculty and educational programs.

While there are other areas pursued by faculty members that are not represented here, such as research, this guide is focused on teaching (including teaching research).

Overview of teaching roles

Clinical teacher in DTMU

Two tasks are described, based on the type of involvement with the learner: clinical coach and competency coach. The same teachers may be engaged in both tasks with the same learner and may be involved with only one task with other learner.

Clinical coach

This task describes the activities most commonly associated with day-to-day clinical and must explicitly role model the competencies required of MD programme graduate (and also relevant to the field of teacher's medical specialty) stimulation clinical reasoning and problem solving both with individual learners and with groups of learners in the clinical setting are part of this task. The clinical teaching (coaching) provides timely learner –centered and specific feedback that is based on learner performance and toward learning needs. Activities include using the teaching program's assessment tools. The teacher also gathers information about personal teaching performance (through peer-assessment and/or student's feedback) in order to continuously improve.

Competency coach

The competency coach facilitates the planning and career development of the learner (student, resident) this also may include research “advisor” (for planning and/or supervising student’s research projects) role. This is the teacher who works together with the learner on longer-range goals, teaches facilitates the learner taking ownership of personal lifelong learning and career development. An international focus on professional identify is also part of this task.

Teacher outside the clinical setting

This includes any teaching context not involving direct patient care delivery; and imply one key task: the design and delivery of teaching sessions such as tutorials, seminars, simulations, large-group lectures, e-learning, lab workshops, etc., with students, residents, faculty and the other learners. While there is a considerable difference between the skills used in delivering these diverse sessions to the many types of learners, the fundamental activities that make up the task are similar. Most often delivered to groups of learners, this task’s activities are divided into the preparation of the session, its delivery and facilitation, and reflection after teaching in a process of continuous quality improvement.

Design and delivery of Teaching sessions outside the clinical setting

Activities required to prepare a teaching session include understanding the nature and needs of the learners, the materials to be used, and teaching strategies to be employed.

During the teaching session, not only is the teacher delivering content but he or she is also actively engaged in ensuring that the stated learning objectives are met and that group engagement and interaction is effective. Creating a safe learning environment is important. In some classes (situations), learner assessment is an included activity.

After the teaching session, the teacher deliberately considers what went well and what needs adjustment in order to improve the session, using tools of guided self-assessment. Learners are supported through feedback.

Educational Leader

Unlike the first two roles, which mainly focus on the interactions between teachers and learners, the role of the Educational leader also encompasses teachers, faculty and educational programs. It includes tasks and activities included in educationally oriented positions taken by teachers, for example curriculum leads, program directors, department heads and teaching courses heads. While these positions are often very broad in scope, the guide focus on two

specific tasks related to education: Educational Programmer and Educational Administrator. A single individual may take on either or both.

Educational Programmer

This task involves the design and development of educational programming. It includes the required aspects of developing curriculum: needs assessment, implementation, evaluation and subsequent adjustment.

Developing strategies for learners with progression challenges is another activity under this task. Those involve adjust learning plans, curricula and resources to support learners and teachers and may also work directly with teachers to deliver these modifications and evaluate their impact.

Educational Administrator

The Educational Administrator provides leadership in teaching sites and educational roles. This task includes program evaluation and collaboration across sites, programs, specialties and health professions. It also includes application and development of educational standards and objectives, as well as stakeholder engagement in identifying expectations, alignment, and advocacy; deploy or develop the necessary resources for their programs.

Part 1. Teaching, supervising and learning in DTMU

1. Planning teaching and learning: Curriculum design and development

Guideline principles for program planning

During planning stage, learning program should include the following topics:

1. Description of program profile;
2. Outlining the program goals, description of learning results with terminology of competence, knowledge and skills.
3. Determination of field-specific and general competences accepted within the program.
4. Formation and description of academic content (topics) and structure (modules and credits);
5. Determination of educational units and activities focused on reaching agreed results.
6. Determining the types of educational entities and activities aimed at achieving agreed results;
7. Creation of the system, suitable to the quality assurance and development;

Details for clarification

Program profile – determination of requirements of the program and its realization; consultations with interested sides, working with focus groups, also place in national and international context, etc.

Learning program, based on results, is mainly focused on academic degree or qualification profile. Profile must be based on the needs identified and recognized by the society, which is a very dynamic process. Clearly outlined profile considers interests and perspectives of different users. In practice, internal interested sides are students and academic community, external interested sides are: employers (organizations), graduates, professional organizations. Each of them has its own place in deciding, on which general or field specific competences should focus be made and how much. Furthermore, each of educational program profile is unique. Finally, profile is based on conclusions and decisions of academic personnel and is approved by responsible institution.

Learning outcomes – Complete and relevant description of the results in the entire program and its components; Compliance and distribution of learning outcomes with the program profile; Formulating the results of the study in specific and general competence and matching them with the relevant level of the program; Their proper assessment methodologies; Define the relevant approaches to competences in teaching and learning.

Expected learning results – according to all recommendations, employers' requirements and needs should be considered.

It means developing an adequate skills and ethical values for several regulated professions. E.g. from learning results determined in learning program/curriculum (knowledge, skills), most actual will be discussing medical professional issues.

Content of the program/curriculum – content of program must provide an opportunity to reach estimated learning results.

Furthermore, we as part of European community and participants of Bologna process are somehow limited. Meaning that level of our graduates must meet common European standards (considering modern competition, it is desired to overcome these standards), to have opportunity for them to participate in after educational stage programs. In this context, evaluation of learning materials' level has high importance. Such landmarks, including regulated fields (selected prototypes for comparison and reconciliation of learning materials, schools), do exist.

Program organization – in this field, modern requirement/recommendation is integrated teaching. Integrated curriculum's design requires structuring around results and integrated evaluation provides integrated teaching.

Learning/teaching forms must be field-specific.

Furthermore, quite long list of teaching methods exists, but results are most important here: in fact, such lists only categorize pedagogical activities, also, realization of each approach differs not only between pedagogues, but even in practice of the same teachers, depending on goals and needed results. Even format and/or functional part of the lecture can be changed; e.g. during lecture, can be discussed vital, complicated issues, as well as separate problem/problem groups, and this spreads on other teaching methods. Therefore, naming the method itself can be convenient, but it does not exactly reflect the actions of the pedagogue. Accordingly, like the case of teaching, for determining teaching methods, study and analysis of the assignments (additionally finding and reviewing the literature, training of professional skills, doing research, writing projects, etc.), given to the students, are needed.

Curriculum design

The content of the curriculum should be determined by the knowledge the student understands and the skills that the student should be able to demonstrate after completing the course / module or training program.

The entry level of potential students is important. Rule of module generation – module should consist of written down clear learning results, sufficient criteria's of teaching, learning and evaluation, starting knowledge / experience level needed for module learning, desired knowledge level and etc.

Learning program/curriculum content is determined by student's desired key knowledge and skills that should be obtained during learning process. Learning results are formulated on level of educational program, as well as on individual course/module level.

Competences are developed in progressive way. This means that their formation is done on different levels of the program, by the course units or by specific number of the module. During the planning phase, decision must be made about which unit should contain which particular competence. Furthermore, there may exist some competences, formation of which is not outlined clearly. Only those competences, which can be defined factually, must be defined in detail.

In student-centered and result oriented educational program, all unites are connected to each other in one way or another.

This affects not only those course units or modules, which are the main part or core of the curriculum, but also additional or elective courses. In well planned program, additional or elective courses must strengthen profile of educational program, ensure future choice of student's further career development.

During discussion of *learning workload*, credit definition rule and their connection with learning results, is important.

In addition, issues with provisioning the program with needed resources for realization: monitoring, modernization abilities; sustainability, organization and other issues.

Change of program (curriculum) – modernization for development means (i) creation of new curriculum model and educational strategy, and/or (ii) integration of new themes in curriculum, and/or (iii) implementation of new learning situations, new goals and new methodologies, and/or (iv) implementation of new evaluation methods, which also means requirements of staff development.

For defining abilities of program modernization and realization, following two issues are equally important: (1) modifying curriculum according to the modern changes, achievements

challenges in the field (medicine); (2) preparation of process correctly and step by step direction of the procedures.

Preparation and direction of process for program creation and/or modernization

Process preparation:

It is important to take out processes from control of the departments on the beginning stage of modernization and creation of the group, which will take responsibility for curriculum design. On this stage, group is called “curriculum development group”; best characteristics for this group are: leader – high position holder in the university (decision maker), e.g. dean; proposition and not assignment of group members: discussion of those staff members who have proven to be enthusiastic in medical education and are willing changes. In addition, it is important to keep balance between base and actual scientists, critics (less is better), general profile doctors, non-university profile base critics and administrative representatives. It is desired to involve young doctors, students and other members of society. In addition, it is desired to keep balance between age, fields (base/clinical) representative number and administrative number of the participants.

Procedure handling:

- Creation of curriculum generation/creation group;
- Correct formation of the group (balance between age, fields (base/clinical) representative number and administrative number of the participants);
- Generation of curriculum design;
- Discussion of curriculum design in specific groups, providing information to the interested cycles;
- Generation of final scheme of the curriculum and writing down of course syllabus;
- Presentation of needed details and correct planning of evaluation system;
- Self-evaluation of program in every needed direction or aspect (e.g. Needed human and material resources, program, courses, goals that graduates must achieve, etc.);
- Approval of curriculum by the committee;
- Approval on academic counsel;
- Preparation of process for external evaluation and presenting program to national center for educational quality enhancement¹;
- Program accreditation;
- Program implementation.

¹ note executed changes do not always require re-accreditation of the program (see above mentioned integration of new themes in curriculum, and/or (iii) implementation of new learning situations, new goals and new methodologies)

Related literature with program creation, planning and development, etc.

1. Amanda Howe “Twelve tips for developing professional attitudes in training”; *Medical Teacher*, (2003); 25:5, 485-487
2. Raja C. Bandaranayake “How to Plan a Medical Curriculum”; *Medical Teacher*, (1985), 7:1, 7- 13
3. AlamSher Malik &Rukhsana Hussain Malik “Twelve tips for developing an integrated curriculum”, *Medical Teacher*, (2011); 33:2, 99-104
4. Mohamed M. Al-Eraky “Curriculum Navigator: Aspiring towards a comprehensive package for curriculum planning”; *Medical Teacher*, (2012), 34:9, 724-732
5. Richard T. Sarki, Larrie W. Greenberg & Andrew P. Wilking “Twelve tips for a successful clerkship”; *Medical Teacher*, (1997), 19:2, 95-98
6. Helen O'Sullivan, Walther van Mook, Ray Fewtrell & Val Wass “Integrating professionalism into the curriculum: AMEE Guide No. 61”; *Medical Teacher*, (2012),34:2, e64-e77
7. Peter Mcleod& Yvonne Steinert “ Twelve tips for curriculum renewal”; *Medical Teacher*, (2015), 37:3, 232-238
8. Judy McKimm& Paul Kneath Jones: Twelve tips for applying change models to curriculum design, development and delivery; *Medical Teacher*,(2017): DOI:10.1080/0142159X.2017.1391377
9. Katrin Schüttpelz-Brauns, Elisabeth Narciss, Claudia Schneyinck, Klaus Böhme, Peter Brüstle, Ulrike Mau-Holzmann, Maria Lammerding-Koeppe I & Udo Obertacke: Twelve tips for successfully implementing logbooks in clinical training”; *Medical Teacher*, (2016), 38:6, 564- 569

2. Strategy of Teaching and Learning

Educational philosophy of DTMU MD program is based on such curriculum design and delivery which serves to achieve program learning outcomes. Principles base on facilitation of

students learning, independent thinking, collaborative work and initiative. Implementation of abovementioned is possible with:

- (i) the strategy, which makes the program background and;
- (ii) the methods of teaching/learning used in the program.

(i) Educational strategy is – delivery of spiral curriculum with integrated system based approach using problem based learning and outcome-based education, through the mandatory and elective components of the curriculum.

(ii) Teaching/learning methods used in program

Curriculum teaching and learning strategy is based on the following:

- *Student-centered*

This means that during planning, delivery and assessment of the curriculum more focus is made on learning not on teaching, in whole the objective is to focus students more on developing understanding and other skills; learning methods are chosen for effective support of students.

- *Directed self-learning*

Means that teacher makes objectives/tasks and the responsibility of the students is to implement them: responsibility for the learning is shared between the teacher and student through student's active (non-passive) participation.

- *Promoting*

Teaching methods and the role of the teacher is determined as promoter of searching; the program contains didactic teaching (mostly on the first stage of the curriculum, I and III topics of the course) and is embedded in such a manner that gives necessary information to the student to think and understand what he/she has learned.

- *Integrated (Deep-Learning)*

The goal is to give clinical meaning to everything what the student learns to make learning process interesting and relevant, in the same time, we need the students to know scientific principle of the medicine so that deep understanding of basic medical sciences to make background for the clinical skills and practice. The students also have to understand why they study these issues, be able to use information critically, not to learn for “examination”, which they forget immediately after passing. This approach is included for facilitation of deep learning.

- *Understandable learning objectives*

Understandable learning objectives work as communication measure between students and teachers, it makes understandable what is learned and assessment of learning outcomes.

- *Use of spiral curriculum*

The program bases on cyclicity around 9 modules of spiral curriculum. The cycle makes three spirals. I spiral of the cycle is the stage of basic and clinical sciences; where in human system based modules explanation of mechanisms of system norm and pathologic processes, clinical

(meaning) assessment of pathologic processes; typical clinical manifestations, diagnostics of disorders, principles of developing patient's management plan, communication with him/her, etc. II spiral bases on the first one and is organized around 9th module at the stage of learning clinical medicine, represents so called transitional stage between at first mostly directed study and more self-directed study of the third stage. At 2nd stage deeper revision of 9 organ systems is done by working at real patients cases, more focus on patients medical and social, health problems, communication peculiarities; III spiral is clinical clerkship, bases on students previous experience (I, II spiral) with the purpose of his/her (knowledge, skills) consolidation and preparation for practice (residency program).

- *Structured around educational module*

At the stage of basic and clinical study module content is delivered during the sessions of academic week which is also included in problem based learning (*PBL week*) and case-based learning (*Principles of Clinical Diagnosis with Clinical Assessment of Pathological Processes*) in order the students to have additional measures for understanding the relevance of their learning to the future clinical practice.

Understanding Student Learning

- *Problem-Based Learning (PBL)*

Students work in small groups with facilitator at series of clinical problems. Groups work three times a week (2+2+1 hours) and work on one problem during the week. They start working on it at the first session, make learning objectives (under supervision of facilitator); at the second session they come back with found information, discuss it, receive further information concerning the patient/problem for stimulation of further study; they continue the feedback and finish working at problem at the third – one hour session.

- *Case-Based Learning (CBL)*

Students work in small groups; it is like PBL, however, with significantly smaller time (per each case); *Principles of Clinical Diagnosis with Clinical Assessment of Pathological Processes*; *Courses of Clinical Skills*. Cases will be used in most of the clinical courses.

- *Competency-Based Learning*

The students work to reach experience in particular (specific) list of competencies, e.g.: cardiopulmonary resuscitation, communication skills with patients, etc.

- *Portfolio-Based Learning*

At the stage of clinical study students fill log-book where they write information related to the curated patients, acquired skills, discussed ethical issues, ambulatory, hospital, cases and skills seen at other clinical institutions. In defined components (in case of reaching) they are awarded with credits. Student's personal education plans are also part of the portfolio; the student can identify (we expect from them) own strengths and weaknesses.

- *e - Learning*

There are important e-resources for self-education in the library, including for preparation to PBL and CBL, training in clinical skills, preparation of presentation, scientific project, etc.

- *Patient Oriented Learning*

Students study from real patients, everywhere where it is possible, in the ambulatory and hospital environment, rehabilitation center, etc.

- *Lectures*

Lectures are important academic resources for curriculum. It is encouraged the lectures to be interactive as much as possible; focused to present big (macro) picture, to clarify difficult issues and/or summarize particular material, so that existing material can be learned more effectively.

- *Discussions in large group*

Discussions in the group are used for debates. Some issues of ethics are delivered by this way. The students duty is to present specific opinions and justify the new position.

- *Discussions in small groups /workshops*

The students have discussions in small groups – despite PBL and CBL tutorials, for example discussion of scientific works at Journal Club format.

- *Posters*

Presentation of project works in the framework of academic module/course (e.g.: principles of scientific research).

- *Observation of clinical practice*

Students study through observation of clinicians and patients communication in order to start practice, based on the knowledge obtained from patients and colleagues.

- *Clinical experience under supervision*

Students have to obtain as much experience as possible through communication with patients. Constructive feedback given by the staff significantly influences their education; this is possible by either observation of patients or presentation the data to the staff members or students by presentation.

- *Group learning*

The students work in groups including in the format of PBL and case-based learning where they learn to listen others, respect others' and different opinions, get accustomed to group discussion, share responsibility on group work, agree the opinions and develop other interpersonal skills. Importance of group work is emphasized during learning of clinical and communication skills and during all clinical rotations.

- *Role-play*

Role-play is valuable for learning of issues in which the students might have less personal experience, including e.g.: communication with “problematic” patients, from different cultural environment, etc. Simulated patients may be involved here; which also helps the feedback related to the academic sessions and evaluation of students.

- *Presentations*

During the program the students make presentations for other students and the staff. Some presentations are verbal, some are posters, some individual or prepared in groups, some in small groups (e.g.: PBL tutorial), some in bigger groups.

- *Peer Tutoring*

There is valid evidence that humans learn an issue much better when they teach. PBL and CBL stimulate peer tutoring; there are such formats in DTMU; there is a big experience of tutoring junior students by senior students in basic disciplines (share their experience in learning progress), as well as they teach clinical skills (there are three such interest groups at the university: surgery, obstetrics and gynecology and neurology).

- *Practical Classes*

Practical classes are necessary resource so as to facilitate the students in understanding scientific knowledge on human body; in correlation of knowledge with clinical problem in PBL and CBL format and in discussion of patients seen during clinical rotations.

- *Training of Clinical Skills*

The students have access to labs of clinical skills where the students study clinical skills in safe environment, models and mannequins are the means for training in such skills, which is impossible by practice on each other. Sessions of clinical skills are embedded in curriculum from basic and clinical sciences level and continue in the years of clinical practice.

3. Assessing Student Learning

Assessment Strategy

The goal of MD program is to prepare humane, clinically competent practicing doctors with skills of clinical reasoning and life-long learning. Assessment strategy is used to facilitate reaching this goal. Although, it is generally accepted that assessment is main characteristic of learning, we hope that our students will not be oriented only on passing exams; assessment is integrated in curriculum to facilitate the educational approach.

MD program facilitates obtaining knowledge and development of problem-solving skills through group- and self-directed learning. Assessment framework helps this approach through acknowledgement and motivation, gives direction to progress adequacy and gives the student feedback on issues which need further work.

Assessment tests judgement and use of knowledge, skills (clinical assessment, procedure skills, critical thinking) and professional behavior.

Key Principles of Assessment

Assessments should be valid and reliable in context. Formative assessments are used in order to inform students quite frequently about their progress. The staff has to be informed concerning each student in order to conduct repeated activities for helping the student to solve the problem. Formative assessments are used mainly for the purpose of feedback, however, it also takes part in assessment if the student has passed the course.

Summative assessments can be also used for the feedback to students, either formative or summative (Semester) results are included in students' personal files concerning their achievements.

Methods of Assessment

Multiple choice questions, where the students choose the best answer from the list of possible answers. Most of the questions are asked in the format of clinical scenarios or vignettes;

Good for assessing

- ✓ Knowledge and application of knowledge;
- ✓ Core knowledge in all DTMU MD programme competencies;
- ✓ Diagnostic reasoning (Especially when question is constructed in case of a clinical case scenario or a vignette format).

Limited ability to assess

- ✓ communication skills
- ✓ collaboration (e.g., teamwork)
- ✓ ethical behaviour
- ✓ leadership
- ✓ organizational skills

Mini-Cases, which are involved in practical classes of diagnostics course are also included, for example, in clinical skills training course.

Format typically prefaced by clinical scenario or vignette and consists of a brief, highly directed question designed to elicit a reliable, constructed response from the learner. Answers usually consist of a few short words or phrases. The model answer key is designed to comprehensively anticipate all correct answers.

Good for assessing

- ✓ breadth and depth of factual knowledge in all MD program themes

- ✓ clinical application of knowledge and diagnostic reasoning
- ✓ problem-solving skills

Limited ability to assess

- ✓ behaviour in clinical settings
- ✓ written and oral communication skills
- ✓ collaborative abilities, such as shared decision-making, team leadership and negotiation
- ✓ professionalism, such as integrity, commitment to self-regulated practice
- ✓ and maintenance of personal well-being

Questions of Problem Analysis, where the students are given short vignettes in which either context or stimuli for questions are delivered, which requires data interpretation, critical analysis and knowing mechanisms of patient's problems from students.

Good for assessing

- ✓ medical expertise (knowledge and attitudes)
- ✓ organizational and writing skills
- ✓ ability to synthesize information
- ✓ approaches to critical appraisal or teaching
- ✓ professional knowledge base (e.g., applied ethics)

Limited ability to assess

- ✓ performance in actual practice
- ✓ practice behaviours
- ✓ clinical skills and procedures
- ✓ collaborative skills (e.g., teamwork and conflict negotiation)

Objective Structured Clinical Examination (OSCE), where students perform the tasks from their structured list, which may contain practical procedures, methods of interview or data interpretation.

Good for assessing

- ✓ history-taking skills
- ✓ physical examination skills
- ✓ physician–patient communication skills
- ✓ diagnostic reasoning, patient management and treatment planning
- ✓ knowledge base within a specific context

Limited ability to assess

- ✓ complex ethical and professional behaviours
- ✓ collaborative interactions

- ✓ teaching and research skills
- ✓ a large spectrum of knowledge in different areas (given time constraints
- ✓ and limited number of stations)

Clinical Cases, e.g.: Mini-CEXs, where observation on students, their communication with standardized and/or real patient is done, and where they also answer the questions asked by the examiner.

Good for assessing

- ✓ history-taking skills
- ✓ physical examination skills
- ✓ physician–patient communication skills
- ✓ diagnostic reasoning, patient management and treatment planning
- ✓ knowledge base within a specific context

Limited ability to assess

- ✓ complex ethical and professional behaviours
- ✓ collaborative interactions
- ✓ teaching and research skills
- ✓ a large spectrum of knowledge in different areas (given time constraints
- ✓ and limited number of stations)

Direct Observation of Procedural Skills, where students are observed to see how they fulfil particular procedures to prove competency (e.g.: measuring pressure, etc.).

Good for assessing

- ✓ nearly all practical skills

Limited ability to assess

- ✓ scholarly research competencies
- ✓ scholarly lifelong learning

Case-Based Discussion (CBD), where students are asked questions by structured way on cases in which they are actively included.

Good for assessing

- ✓ Basic and Medical sciences
 - factual knowledge
 - clinical reasoning skills and problem solving
 - critical thinking (evaluation, synthesis and analysis)
- ✓ Clinical and communication skills
 - interpersonal skills
 - ability to organize information in a clear and logical fashion

- ✓ Community and Population Health
 - knowledge base (e.g., structure of health care system)
 - knowledge of determinants of health
 - knowledge of community services and social supports
- ✓ Personal and Professional development
 - use of supporting evidence for decisions
 - ethical reasoning

Limited ability to assess

- ✓ breadth of knowledge
- ✓ procedural skills
- ✓ physical examination
- ✓ actual performance in real situations
- ✓ collaboration, teamwork and leadership

Portfolio, set of evidences which represents the skills obtained by students, how to deliver and accept constructive critics for their personal development and study.

Good for assessing

- ✓ complex performance and integrative competencies in all MD program themes
- ✓ documentation of procedural activities
- ✓ various aspects of the Communicator Role (written, oral, interpersonal)
- ✓ portfolios—may be the strongest method to assess Scholar competencies of lifelong learning, research and teaching
- ✓ demonstrates evidence of collaboration and teamwork;
- ✓ good for assessing performance in authentic situations
- ✓ excellent for providing ongoing formative assessment

Limited ability to assess

- ✓ situations in which all learners must demonstrate the same competency in a standardized way
- ✓ situations where summative decisions are being taken and high reliability is required

Reports, Oral Presentations or Posters fulfilled during particular academic modules (e.g.: Principles of Scientific Research).

Progress Test – currently the students take international progress test delivered by EBMA twice a year which also allows giving feedback to students; for possibility of personal development and defining their own learning objectives by analysis of student’s individual need. Where it is possible assessment is done in clinical context and written assessments are used like practicing doctor’s duties, such as: for example: patient notes – history collected during personal supervision of patient by the student, examination results, diagnostics and management plans.

Writing Critical Evaluation about journal article.

Scientific Research Project for grant application.

4. Supervising MD and PhD students

Scientific-Research Work in the MD Program and / or PhD dissertation in the PhD Program (Thesis)

- (i) For the MD work (Master's level) or PhD Thesis the student must show the creative skills in the research field within the study program.
- (ii) The PhD student's readiness for independent scientific research and creativity is confirmed by the defense of PhD thesis. Determination of the basic characteristics of the final PhD thesis (dissertation), preparation of the thesis, admission to and defense is regulated by the "Law on Higher Education" and the internal regulations approved on the basis of the rector's order in DTMU.
- (iii) The research topics for MD program students should be registered at the beginning of the fifth year of study (not later). The student makes an application regarding the subject of study to the Vice-Dean (his own ideas, or from the list of research topics announced by DTMU); If the student develops his own research idea, than he/she provides the candidate of supervisor and in such case will need the consent of a supervisor (and/or department).
- (iv) For the MD Program student the Dean registers:
 - a) The title of the student's Research Work
 - b) The supervisor, as well as prospective Reviewer
 - c) The day of Defense of Research Work
- (v) The student works on research paper with the help of the supervisor.
- (vi) The Reviewer assesses the work (in the case of PhD - opponents) and submits a written conclusion.
- (vii) The student (of MD Program) has the right to get acquainted with the conclusions of the supervisor and the Opponent three days before the date of defense (the latest).
- (viii) The defense of Scientific-Research Work is subject of qualification exams.
- (ix) Defense of Scientific-Research Work is assessed on the basis of A-Fx.
- (x) Scientific-Research Work is written in Georgian or English. If the work is written in Georgian, the Summary (Abstract), at least 1 page, is requested in English and vice versa.
- (xi) After the defense of the Scientific-Research Work, including electronic format, will be distributed to the library for archiving, bibliographic registration and publication. The terms of the publication are described in accordance with university regulations (approved by the Rector's Order). 13

Designing of the Scientific-Research Work (Master's level):

- Pages of Introduction Part: The title page, or the header (the title of the master's thesis is written in the middle of the page); the abstract no more than half a page in Georgian and English, which briefly describes the actuality, purpose and main innovations of the thesis; Contents; List of shortenings and abbreviations; List of charts, tables and graphs.
- Main Text: Introduction; Literature review; Research Material and Methods; Results of their own Research; Discussion; Conclusions;
- References: List of literature in accordance with the defined rules.
- Annexes: if any.

Volume of at least 50 pages.

Designing of PhD Thesis (PhD)

- Pages of Introduction Part: Title page (external and internal cover); Contents, List of published publications around the dissertation, list of shortenings and abbreviations, list of charts, tables and graphs.
- Main text: Introduction; Literature review; Research Materials and Methods; Results of their own research; Discussion of the results; Conclusions; Practical Recommendations
- References
- Annexes: If necessary

Designing of the PhD Thesis Abstract/Synopsis (PhD)

- PhD Thesis Abstract/Synopsis should be prepared in Georgian and English
- Structure of PhD Thesis Abstract/Synopsis:
 - General Description of the Work
 - Actuality of the Problem
 - Aim of the Study
 - Objectives/tasks of the study
 - Scientific Novelty
 - Theoretical and Practical Value of the Work
 - Approbation of the Work
 - The Structure and Volume of the Thesis
 - Research Design and Methods
 - Results and Discussion of the Study
 - Conclusions
 - Practical Recommendations
 - List of Scientific Publications around the Thesis

Plagiarism Institutional Framework, Policies & Resources

“Internal Labor Regulations for Academic Staff” (Article #11.13):

“... Academic staff is also responsible to create conditions for encouraging academic integrity among students, to identify plagiarism and/or other cases of falsification and also to raise awareness about academic writing culture among students through orientation meetings and clarifications during educational process, to warn students regarding plagiarism issues and refer to university resources in order to identify plagiarism...”

- “Internal Labor Regulations for Administrative Staff” (Article #3):

“Administrative staff is responsible to protect and maintain originality of documents regulating university activities (library and information means)”

- “Statute of Doctoral Committee” (Article #3):

“In case of identifying plagiarism or falsification of dissertation materials and documents by PhD student dissertation is excluded from consideration.”

- “Provisions of Dissertation Council” (Article 4. Application of dissertation thesis to the doctoral committee#9):

“Conclusion of experts` commission should evaluate timeliness, novelty, originality, theoretical and practical value of implemented research, adequacy of the study design and methodology, structure of dissertation thesis, quality of design and language verification. **Also, dissertation thesis should be evaluated for plagiarism and it is identified before and/or after public defense, dissertation council is authorized to not allow candidate for defense . . .**”

- “Students Internal Regulations” (Article 2. Student`s Obligations):

“2.4. Student should strictly follow university regulations, including familiarization with “Students` Ethics Code”, particularly with rules & regulations related to academic processes and protect academic integrity”

- “Rules for Regulating the Educational Process at the University” (Article 12):

The faculty`s responsibility at the University is to preserve high standards of Academic Integrity; Consequently, any attempt of the student to present the work of someone else or any other work that is not fulfilled by him/her (fulfilled by his / her participation); or an attempt to "pass" an exam in an inappropriate form (using certain literature without permission, passing an exam instead of someone else and/or using someone else to pass an exam, etc. See in the Rules of Student Behavior) will be considered as a particularly serious violation; will be considered as the grounds for the student`s disciplinary punishment, and as for the work performed by him, it will be annulled.

- “Students Code of Ethics” (Article 4. Rules related to academic processes):
 - #4.1 Academic fraud will be considered as inappropriate and unethical behavior for the student, in particular the student has no right:
 - #4.1.5. To present someone else`s work as his/her own work or to use quote or phrase without indicating its source (plagiarism). . .
 - # 4.1.8 to encourage other students for academic fraud (Copying from another student's work, presentation of another person's work as his/her own, falsification of research informations, plagiarism).

- “Concept of Academic Integrity Protection in Learning, Research and other University Activities”
 - *Annex 1 – “Turnitin” Program and possibilities of its use*
 - *Annex 2 – Teacher/Instructor oriented Instructions for “Turnitin” Use*
 - *Annex 3 – Student-oriented Instructions for “Turnitin” Use*
 - *Annex 4 – Students Memo on Plagiarism*

Part 2. Teaching and assessment in the key Aspects of curriculum themes regarding study stages

General criteria of assessment in each theme and descriptors for education in each stage are given below.

1. Key aspects of learning and teaching in Basic and medical sciences

- Adequate knowledge and understanding of human normal and disordered structure, function, behavior.
 - Ability to use this knowledge for diagnostics, management and prevention of health problems (use of theory in practice).
 - Ability to organize and present information in coherent, logical and complete form.
- I. Stage – study of basic and clinical sciences in the context of clinical meaning, “paper-based” patients, standardized patient cases.
 - II. Stage – use of obtained knowledge at first level on “real” patients.
 - III. Stage – integration of obtained knowledge (through all parts of the program) and preparation for the first year of residency.

2. Key aspects of learning and teaching in Clinical and communication skills

- Ability to obtain and interpret clinical symptoms and signs by interview and examination of patients, record and relate them to each other; use them in relation with other existing clinical data to develop management plan with patient and other professionals.
- Shows and understands necessity of doctor-patient relationship, ability to listen to patient and his/her family members and uses all means for effective communication.
- Ability to conduct important clinical procedures including solving emergency clinical situations.

I. Stage - studies how to conduct clinical procedures and effectively communicate with patients (mainly standardized or virtual patient) either in classroom environment or on real patient.

II. Stage – is done in more experienced, clinical and communication skills in hospital and ambulatory patients, environment through intensively monitored practice.

III. Stage - is quite competent in clinical procedures and communication with patients, is preparing for residency program in conditions of limited supervision.

3. Key aspects of learning and teaching in Public and Population Health

- Shows understanding of political, organizational and economical frameworks in which Medicine works in Georgia (and globally), including national healthcare system structures and functions.
- Shows knowledge in issues and techniques included in study of disorders influence at population, public and individual level.
- Evaluates rights and needs for persons with mental and physical disabilities.
- Shows knowledge of social and psychological load of persons with chronic disorders and/or disabled ones and their caregivers.
- Shows understanding of knowledge in issues (including screening) of health support and prevention of disorders.
- Evaluates needs for local society in relation with delivery and access to services.
- Shows knowledge in principles of control of contagious disorders.

I. Stage - Studies psychological, social and population issues in the context of health and disorders by cases, seminars.

II. Stage - During rotations in clinical medicine shows knowledge related to the importance of context of psychological, social and health services for patients.

III. Stage - shows patient-centered practice in conditions of limited supervision in ambulatory and hospital settings.

4. Key aspects of learning and teaching in Personal and Professional Development

- Shows understanding of medical practice, professions, professional behavior.
- Shows understanding of legislation related to the medical field.
- Agrees to necessity of use of evidence-based medicine in making clinical decision.
- Shows basic understanding of statistical approaches for data analysis and an ability to choose the most suitable statistical method for specific situation.
- An ability to evaluate publication critically.
- An ability to collaborate as a team member.
- Shows skills of writing information, organization and management, including use of corresponding information technologies.

I. Stage - Learns principles of professional practice and effective learning.

II. Stage - During clinical rotation in conditions of supervision and monitoring trains in using professional standards and requirements.

III. Stage - Shows professional standards and requirements in the context of limited supervision.

Part 3. Enhancing personal practice

1. Personal practice Enhancement opportunities in DTMU

Medical Education Center in DTMU

Medical Education Center (MEC) in DTMU is established and operating in the framework of Tempus Project “ePBLnet” (#530519-TEMPUS-1-2012-1-UK-TEMPUS-JPCR) and its objectives are: Development of human resources in the field of Medical Education in terms of professional, as well as personal skills; Updating existing curricula and development of new curricula; Dissemination of information regarding modernized and newly developed curricula achievements, activities and evaluation; Development and implementation of sustainable educational technologies and systems, including development and implementation of online assessment systems; Involvement to the existing networks of sustainable international cooperation (consortia, coalitions, etc.) in the Medical Education field and establishment of new networks.

With regards to the development of human resources in the field of Medical Education the following courses (not **limited** by the list, which is continuously renewed) are delivered by MEC:

- **Principles of Teaching in Medical Education:** The aim of the training course is considering key (for the medical education) educational principles regarding teaching, learning and assessment.

Target audience of the course: teachers and other stakeholders (students, administrative staff) of the higher educational institutions (colleges, universities). After completion of the course learners gain competencies in modern principles and approaches in medical education regarding teaching, learning and assessment (issues defined by the course content).

- **Development of Modern Medical Curriculum:** The aim of the course is planning of modern medical curricula/ particular courses in the framework of integrative teaching. Target audience of the course: teachers and other stakeholders (students, administrative staff) of the higher educational institutions (colleges, universities). After completion of the course learners will know modern principles of curriculum planning and development, new models of curriculum, organizing of new themes in content, new learning situations and educational environment, modern aspect of using and implementation of simulations in teaching
- **Running and Facilitation of Problem-Based Learning Sessions:** The aim of the course is to develop knowledge and experience in essence and design of teaching and learning in PBL format, responsibilities of tutor and students, facilitation of the process, assessment, group dynamics and managing difficult situations. Target audience of the course: teachers and other stakeholders (students, administrative staff) of the higher educational institutions (colleges, universities). After completion of the course learners will define what is the format of Problem-Based Learning, describe principles and approaches of PBL format, describe stages of the group dynamics, describe roles and functions of PBL tutor, distinguish various PBL cases and their structures, assessment of students in PBL sessions.
- **Writing of Clinical Problem-Based Cases:** The aim of the course is to create clinical problem-oriented educational (clinical sciences) cases in the format of their formulating and implementation as the projects. Target audience of the course: teachers and other stakeholders (students, administrative staff) of the higher educational institutions (colleges, universities). After completion of the course learners will develop educational cases in the field of their own “interest” course/specialization and gain knowledge how to plan and develop similar “projects” (educational case) in the future.
- **Instructional Course for Academic Staff:** The aim of the course is to instruct beginner teachers (to revisit experience or share information on amendments in educational process administration) regarding management, documentation, regulations and existing experience in the educational process at David Tvildiani Medical University in order to ease their communication with students, as well as departments (responsible for the delivery of educational courses) and administration while organizing lectures, practical classes and oral exams. Target audience of the course: elected or invited academic staff involved or to be involved in educational process at DTMU.
- **Basic Principles of Higher Education Institution`s Management:** The aim of the course is to consider basic principles of individual and organizational management and to ways of their practical implementation. Target audience of the course: teachers and other stakeholders

(students, administrative staff) of the higher educational institutions (colleges, universities). After completion of the course learners will define the term management and its core functions, describe planning and distinguish strategic, tactical and operational plans. Describe what is organizational structure and its elements, as well as organizational culture, Describe principles and stages of human resource management. Define what is coordination and control and their core principles.

- **ToT for Running Scientific Seminars in the format of Journal Club.** The aim of the course is to develop knowledge and skills for planning, organizing and delivering scientific sessions in the format of Journal Club, as well as ways of implementing gained knowledge and skills at DTMU undergraduate and postgraduate studies. Target audience of the course: prospective tutors of the Journal Club and teachers of Basic and Clinical Sciences` Courses, interested undergraduate students and/or PhD students. After completion of the course learners will be able to run scientific sessions in the format of Journal Club, plan and organize relevant materials and assess students; teach students how to reflect on and critically appraise modern scientific knowledge.

2. Enhancing personal practice: Support through contractual obligations

Part of the contractual obligation of the teachers elected on academic positions at DTMU is fulfilment of pedagogical workload; educational-methodological, scientific research and organizational-methodological work (varieties and norms) is part of the above mentioned, see the chapter 4 in Regulation on Academic workload of academic staff at DTMU. It also includes raising qualifications, that implies:

- Learning new academic-methodical materials 25 h – per year (or according earned credits);
- Obtaining advance experience in medical education 30 h – per year (or according earned credits);
- Attendance the lectures of course heads/other teachers with further discussion 20 h - per year;
- Annual updating/revision of course program in the framework of specialty (and/or program) 20 h;
- Revision of reciprocal learning organized by student-tutors 10-20 h;
- Eddition of materials prepared by students (targeted for peer-teaching, patient education, etc.) 10 h per 1 printed page.
- Preparation of article (in Medical Education) for publication in scientific journal 60 h – per 1 printed page;
- Delivering report on conferences, symposiums and/or publication (in Medical Education) 30 h – per 1 printed page;
- Development of Erasmus+ Project 80-160 h;
- Working with international collaborators on international and/or development oriented projects 100 h;

- Working in different councils (faculty) and/or university (scientific council, methodic council, various committees (e.g. assessment) membership 30-60 h;
- Working in Quality self-assessment group 60-100 h;
- ISE conference organization-methodic supervision: Membership of organization committee 50 h – a year or Working in scientific group 40 h;
- Membership of professional society and active participation (in Medical Education): Participation in workshops trainings, other professional and events generally useful for society 10 – 40 h; Participation in preparation of conferences organized by professional society (in Medical Education) 20 - 60 h; Participation in activities aimed for field development by professional society (in Medical Education) 40 - 80 h.