Life Long Learning System:
Nutrition at the Level of Molecular Medicine

GUIDE BOOK FOR USERS

Life Long Learning System for Training Medical Doctors and Students in Nutrition

European Society for Clinical Nutrition and Metabolism

Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms.

It shall promote understanding, tolerance and friendship ...

(Article 26 of the Universal Declaration of Human Rights)

The aim of Lifelong learning is to provide people of all ages with equal and open access to high quality learning opportunities, and to a variety of learning experiences....

Lifelong learning is no longer just one aspect of education and training; it must become the guiding principle for provision and participation across the full continuum of learning contexts

(COMMISSION OF THE EUROPEAN COMMUNITIES
A Memorandum on Lifelong Learning)

CONTENT

Introduction

Welcome to the Life Long Learning System for Training Medical Doctors and Students in Nutrition

The Lifelong learning (LLL) system has been developed by a network of European partners and ESPEN with the support of the European Commission, Directorate-General for Education and Culture Leonardo da Vinci Programme.

Key Points

> LLL system in Nutrition is based on an Educational curriculum prepared with the consensus of European experts;
> It is a semi-virtual system for providing training in Nutrition through both online and live sessions;
> It offers 70 training modules combining a variety of innovative learning methodologies;
> 20 Live sessions (4-5 per year) contribute to intensive training and certification;
> The System awards credits and competency-based certification for Continuing Medical Education.

To achieve the project aims and objectives three web portals have been developed:

1. **Informational Web Portal** for project monitoring and dissemination of project results. It contains the aims, tasks, partners' description, work programme, results, and impact of the project.
Internet address: www.lll-nutrition.com/

2. **Educational Web Portal for Self-Training**. It is a short version of the LLL system. This portal provides access for online training and self-preparation on certain topics in nutrition. This portal is a very suitable adjunct to the live sessions and courses on certain topics for intensive training and certification. It contains links to registration for Live sessions.
Internet address: www.lll-nutrition.com/edunutrimed

3. **Educational Web Portal of LLL System in Nutrition (e-learning university).** It contains all the tools and resources required for an e-learning university: study navigator to guide the learning process; software for the learning management system (LMS); core curricula, training content, means for innovative training, tools for assessment, procedures for credit accumulation and certification.
Internet address: www.lll-nutrition.com/edu

Network of Partners:

University of Medicine Pleven, Bulgaria (contractor)
Nutrisub asbl, ULB, Brussels, Belgium; European Society for Clinical Nutrition and Metabolism;
Charles University, Prague, Czech Republic;
Rheinische Friedrich-Wilhelms University, Bonn, Germany;
Alliance "Health in Our Hands", Pleven, Bulgaria;
Medical University, Sofia, Bulgaria

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This Guide has been developed for the LLL system by a team of European partners under the framework of the EU programme - Leonardo da Vinci, as a pilot project N BG-03-B-F-PP-166039, titled "Life Long Learning System: Nutrition at the Level of Molecular Medicine" (see project website).

This guide describes the philosophy, strategy and outline of the structure and organization of the semi-virtual system for lifelong learning. It aims to help both educators who are in charge of developing the educational system, and learners who will use it for lifelong learning.

The educators have been provided with instructions on creating training content: information, tests, clinical cases, etc; to define the rules of training; to apply innovative interactive training approaches for learners; to enrol learners in the courses; to communicate with learners; to guide learners' work individually and in groups.

The users/learners have been provided with instructions for registration, enrolment and certification; explanation of training rules and training procedures, the training content template and description of its components, the methodology of innovative approaches and individual guidance; methods of communication with tutors and administrators.

The guide contains six main chapters:

Chapter 1
Philosophy of the Educational System for LLL and Innovative Approaches for Training

Chapter 2
General Principles and Educational Curricula of the LLL System in Nutrition

Chapter 3
Module Catalogue

Chapter 4
Learner Manual

Chapter 5
Structure and Administration of Educational System

Chapter 6
Tutor Manual

Chapter 1

Philosophy of the Educational System for LLL and Innovative Approaches for Training

Four 'pillars' of education for the future were identified by the Jacquess Delors report (UNESCO 1996): learning to know, learning to do, learning to live together, and learning to be ….

"Professional and friendly environment providing the modern knowledge, innovative instrument to learn and to apply the knowledge, responsive atmosphere with educators and peers, self satisfaction of the progress and the competencies acquired; desire to continue and to spread the system to others…."

Dream or reality?

1. Why do we need lifelong learning? Why do we need continuous medical education?

We are living in an epoch of intensive change. The ongoing information revolution and technological developments are contributing to a rapid transition of our society into a knowledge-based society. These challenges demand a new approach to education and training opportunities in the lifelong perspective.

The process of acquiring knowledge or skills throughout life via education, training, work and general life experiences gain a new form - Lifelong learning (LLL). Learning in which a person engages throughout his or her life. The knowledge and skills acquired just through formal education school and higher education are usually not sufficient for a professional career spanning 3-4 decades.

> LLL promotes the development of knowledge and competencies that enable each citizen to adapt to the knowledge-based society and to actively participate in all spheres of social and professional life;
> LLL is given a high priority in the official educational policy of EU and responds to the specific mandate of the "Feira European Council";
> LLL was defined by the EU as "all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social aim and/or employment";
> LLL is a form of education often accomplished through distance learning or e-learning, self schooling or specific courses. LLL also provides educational opportunities outside standard educational systems.

The parallel growth of biomedical science and its implementation in medicine demand continuous professional development and updating of medical specialists. Continuous Medical Education in the lifelong perspective is in coherence with the EU policy of LLL, including various forms of postgraduate qualifications and programs for those who want to improve their qualification and bring their skills up to date or retrain for a new line of work.

The initiative of LLL in nutrition is a significant effort to improve healthcare workers' knowledge in Clinical Nutrition and Metabolism and thus to develop quality care in nutrition.

2. Why do we use ICT for LLL education?
Information and Communication Technologies (ICT)

…are changing the idea of training: e-learning age

Flexible access to information and resources is the key attribute of networked information and communication technologies (ICT).

Terminology used for implementing ICT into the educational process:

e-learning, education online, open distance learning, WEB-based learning:

The use of ICT in the field of education has opened up a variety of opportunities to enhance learning processes in terms of accessibility, flexibility, knowledge sharing, and scalability. The implementation of ICT as integrated networked supports for learning has started a new age, the e-learning age:

> e-learning makes it possible to improve the competencies and knowledge at a time, place and pace that is suitable and convenient for the individual learner;
>
> e-learning offers access to high-quality content;
>
> e-learning provides the accumulated world wide expertise to create and integrate innovative content into the curriculum. It opens the horizons and removes the limits of one educational institution;
>
> e-learning provides the flexibility to modify, change and to update the content and to make it accessible on demand;
>
> e-learning through networking provides world wide opportunities for social, peer and student-tutor interaction;
>
> e-learning reduces the training costs for institutions and individuals;
>
> e-learning reduces time away from work for participants.

Learning Management System (LMS) software is essential to the implementation of e-learning and provides a tool for optimum intercommunication and data compilation.
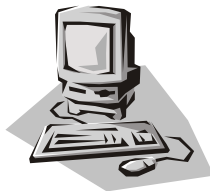
3. What Innovative training approaches could be used for LLL?
Innovative approaches to LLL in a knowledge-based society

In the modern knowledge-based society rapid changes in ICT and technology stimulate renovations in educational pedagogy and learning paradigms: a concept where education is flexible, diverse and available at different times and places.

The important elements of modern education are: Student-Centred Learning, Personalized Learner Portfolios, Situated Learning, Problem-Based Learning, Case study etc.

3.1 Student-Centred Learning: in the frame of learner-centred education, the learner is the beginning and the end point of the learning process.

> Learner needs are the focus of the programme, including learning, assessment, follow up and feedback;
>
> Learners are active partners in the learning process;
>
> Learners are responsible for their own learning and the activity to achieve the educational goal;
>
> Learners choose by themselves the proper learning tools and technologies from those available;
>
> Learners participate in the organization of the learning process;
>
> Learners provide the feedback for programme/course/module/unit to stimulate their renovation and updating;
>
> Learner-centred education offers flexibility to accommodate the variable schedules of all learners.

3.2 Learning Portfolios contain the individual plan of learning and the files or folders, containing evidence of the learning and a summary of the learners' work.

The definition of a portfolio can vary, but there is a general consensus that a portfolio is a purposeful collection of student work and learning outcome.

> Learning Portfolios provide the basis for both improving assessment and motivating and involving students in their own learning.
>
> They provide means for communication, and self-reflection through which students share what they think and feel about their work, their learning environment and themselves.
>
> Strong portfolio systems are characterized by a clear vision of the student skills to be achieved, student involvement in portfolio planning, use of criteria to define the quality of performance.
>
> There are two main reasons for portfolio development: assessment and instruction. Assessment relates to keeping track of what students know and can do. Instruction relates to promoting learning: students learn from assembling the portfolio.
>
> There are portfolio systems that: promote student self-assessment and control of learning; place students into special programs; certify student competence; grant alternative credits; demonstrate students' skills and abilities; build student self-confidence; and evaluate curriculum and instruction.

3.3 Situated Learning

Learner centeredness is at the heart of modern elements of learning: Situated Learning.

> The concept of situated learning is grounded in the belief that learning is most efficient and effective when it takes place within the context of realistic settings in which learners are clear about the reasons for learning (Brown, Collins, & Duguid, 1989).
>
> The situated learning enables students to immerse themselves in the culture of the subject matter; learning experiences can be designed to engage learners into "cognitive apprenticeships".
>
> Situated learning is resulting from the redefinition of the modern knowledge which is described not with the emphasis on memory but on perception as a specific context in which intelligent activity is meaningful and appropriate.
>
> The knowledge is the outcome of an active relationship between the learner and the environment, and learning must take place during the time the student is actively engaged with a complex, realistic instructional context.
>
> The modern learning context includes interacting people, machines, environments, and other objects and agents. The learning context broadly includes a shared culture, understanding, and motivations.

3.4 Problem-Based Learning

Problem-based learning (PBL) is a widely applied approach to learning and teaching that uses a problem as the principal vehicle for learning and teaching.

> The students are given a real life problem to solve and are expected to investigate and explore the knowledge required and how that knowledge can be used; to develop solutions to the problem and to evaluate the solutions arrived at.

Problem-Based Learning is not solely regarded as an instructional technique, but as an educational philosophy or approach for designing curricula. PBL is confronting students with problems of 'real-life'. The 'real-life' problems are often not bounded or solvable within mono-disciplinary constraints; but by means of multidisciplinary approach. Integration between disciplines is an essential impact of problem-based programmes.

Problem-Based Learning is a teaching and learning strategy used widely as a means of engaging students with material, developing collaborative learning, building independent learning and encouraging deeper learning.

Principles of PBL: presenting the problem, participants post their first perceptions of the problem, explore the problem and their initial perceptions, revise their initial perceptions, prepare and post a critical reflection of the problem, record the solution.

Distributed problem-based learning refers to the use of this strategy online in a networked learning and teaching environment. This approach focuses attention on building learning environments that support groups of learners who are engaged in reflection on critical incidents from their workplace.

4. Main competencies of learners as an outcome of the innovative training system:

Knowledge (cognition) in its modern context does not refer only to intellectual development, but also to competencies, skills, and attitudes. The outcomes of modern learning are:

Learning to learn ;
Skills for information processing and management;
Analytical skills;
Problem solving skills;
Creative and Strategic thinking;
Decision making skills;
Communication skills and teamwork.

5. Why nutrition? Is there a need of LLL in nutrition?

The science of nutrition has advanced greatly during the last century; starting with the investigation of essential nutrients it now offers compelling evidence of nutrient influence on genome expression.

The advanced level of scientific achievement, new technologies and developments in biomedical science are rapidly improving the knowledge on metabolism, the implication of nutrition on mechanisms of disease development and the link between nutrients and genome regulation. Nowadays, nutritional support is an important part of patient therapy.

On the other hand, technological advances have changed the lifestyle and nutritional habits of the population: sedentary lifestyles, refined food, over consumption have dramatically increased the risk of development of chronic diseases. The high incidence of common diseases related to nutritional habits: obesity, CVD, diabetes, metabolic syndrome etc. indicates that the knowledge of modern nutrition is insufficiently disseminated and applied.

Modern knowledge in nutrition is important for clinicians in a variety of specialties. Nutrition-related medical problems can't be recognized when physicians do not use nutritional assessment as a part of physical diagnosis and do not initiate relevant nutritional care. Insufficient awareness of the prevalence and the side effects of malnutrition is leading to greater morbidity and mortality.

Indeed, education in clinical nutrition remains insufficiently available in medical education throughout the world thus impeding nutritional care of patient.

The main goal of the development of LLL system on nutrition is to improve professional competencies of medical specialists, who will then apply effective nutritional practices for better health.

Chapter 2

General Principles and Educational Curricula of the LLL System in Nutrition

1. Why should you use the LLL system in nutrition?

The LLL system proposes a powerful instrument to improve professional competencies of users giving them the flexibility to work around the busiest schedule, follow their own goals and educational needs, using innovative methods, updated content and friendly software.

1. 1 Aims and Objectives:

To provide physicians, specialists and students an opportunity to acquire new competencies and skills in clinical nutrition and metabolism;

To promote continuous professional development of health related professionals, enhancing knowledge in nutrition for practical management of nutritional support;

To encourage the application of effective nutrition in the treatment of disease and the promotion of better health;

To give tools to interpret new scientific information on disease mechanism, genetic predisposition and link with nutrition;

To provide education credits for the national CME system and/or to allow access to the European ESPEN Diploma of Clinical Nutrition and Metabolism.

1.2 Innovativeness of the LLL system:

European educational curriculum on nutrition developed by the European partners;

Access to new educational technologies: computer based learning, web tutorial; online curricula, interactive learning;

Modules assigned with credits organized in a specifically designed curricula;

Innovative training methods;

Individualized portfolio based program and approach. Individual list of modules, practical courses, lectures, consultations and tests. Individual tutoring;

Learner/Student-Centred Learning;

Case study-based approach with elements of problem-based learning;

Complementary live courses/sessions at partner universities and under ESPEN initiative;

Forum for open discussion on hot topics and special cases in nutrition.

1.3 Who the programme is for:

Target group: postgraduate doctors, medical students and health-related professionals, who are in continuous need of further qualifications, according to the requirements of their respective fields.

1.4 What the learner will be able to do as a result of training:

Learning goals and outcomes

To identify knowledge requirements, what exactly to learn an how to apply it;

To gain basic knowledge on nutrition, metabolic needs and principles of disease prevention through healthy nutrition and guiding of patient's nutritional habits;

To learn approaches for nutritional assessment and support, principles of nutrition in different clinical situations;

To apply the obtained knowledge in specific clinical situations and to take responsibility

for nutritional support of patients;

To obtain the proper qualification for taking suitable decisions in specific clinical situations;

To acquire practical skills needed to evaluate patient status to plan a nutritional support plan and to manage a suitable feeding;

To deal with patients and to take unsupervised responsibility for patient's nutritional support and nutrition.

1.5 What the learner will receive as a result of training?

Certification and Diploma

The competencies and skills of the learners will be assessed and certified.

Certification will be provided at several levels:

Certificate in one specific topic or one educational module with credits in accordance with specific national CME system;

Certificate for live course on a specific topic;

Diploma in "Clinical Nutrition and Metabolism" (ESPEN). Credit accumulation from different modules provides the opportunity not only to collect them for CME, but also to get the European Diploma in Nutrition.

2. Policy and Principles of the LLL System in Nutrition

The general policy in building up the LLL system on nutrition was to create a rich and comprehensive educational tool for improving the competencies and skills of medical doctors, students and health professionals in nutrition. An analysis of the needs of the target group and a survey of innovative training approaches was the starting point for the development of a modern and efficient system. The following principles were used:

to develop a general structure of the system as an educational tool;

to use a variety of training resources;

to check the suitability of the educational goals to the aims and objectives of the programme depending on needs of target groups;

to use the innovative educational approaches which are expected to produce better outcome for learners;

to make the system flexible: portfolio based training course, which depends on the needs, prerequisites, pace and the availability of learners;

to provide high quality curricula and training content;

to ensure the homogeneity and the coherence of the whole programme.

The main educational unit of the system is a **module** in the frame of web portal with wide variety of accessory educational tools.

3. Modules - The Educational Unit of the LLL System

3.1 Module features:

Modules are carefully constructed through multi-disciplinary collaboration, and figure a precise set of competencies and skills essential for a particular area. The modules in the LLL system contain concentrated scientific and practical information developed by experts in the field of nutrition.

On successful completion of a module a predefined number of credits are awarded. Modules on related subject areas are grouped into 'Topics' making it easier for the user to select modules in a particular field of interest.

Each module contains three main components:

> a piece of information, with a defined layout and format, supplemented with references;
> case for problem solving;
> test/quiz for self assessment.

Modules also include additional tools for stimulating learners' activity and interactivity within the system. They are supplemented with specific personalized activities and tasks, leading to extra credits:

> individual tasks and assignments (concept analysis, data collection, report);
> development of clinical cases based on learner practice;
> forum and chat for discussions and consultations (team work).

Modules give the opportunity not only to obtain knowledge, but to apply the theory in practical situations; to analyze and resolve specific clinical cases. Modules are developed in a way that allows the learner to become acquainted with the problem in the modern context very rapidly.

As the system also provides free access, any of the modules can be taken for free before the learner is sure that the program fits his/her needs and interests. They can then register to obtain credits or certification.

3.2 Module organization

The modular system gives the learner the flexibility to work around the busiest schedule while still being able to interact with the tutor and other learners.

There are two types of modules in the LLL system:

> online modules, which are taken entirely on the WEB/online;
> live modules, which are taken by combining online and live sessions.

Online modules are developed according to the main requirements for e-learning. They are organized as web pages containing: key points and important information; overviews and presentations; references to scientific sources; links to European and national guides; references to book chapters and reports; access to suitable clinical cases and tests for assessment.

Modules provide the opportunity to evaluate the acquired learner competencies by self-assessment tests and a final assessment for certification and awarding of credits. Special registration for online assessment and certification is provided.

Live modules include an online module followed by a live session. LLL system in addition provides the opportunity for learners to participate in "Live sessions", organized according to the schedule of the partners of the project and ESPEN. The calendar of events and live courses for intensive training and certifications is regularly uploaded to the system.

The main purpose of the **Live session** is to supplement an online module with an intensive real-time interactive training (peer and tutor), followed by evaluation and assessment.

At a live session the learners are given a course oriented to dealing with patients' problems; to acquiring knowledge and practical skills to interpret advanced directives of nutritional care; to providing proper nutritional support, and managing suitable feeding techniques. As a result the participants are prepared to effect instant practical change in their clinical practice.

4. Training Content

Nutrition presents a very broad approach integrating basic sciences, clinical applications and public health implications. This programme does not attempt to cover every detailed aspect of nutrition, but rather explores comprehensive educational tools and expresses the best experience and "know how" of European experts. It presents an evidence-based view of the underlying principles applicable to a variety of specialties.

Basic Concepts in Nutrition

Nutritional Physiology and Biochemistry

Metabolism of Macronutrients, Micronutrients and Vitamins

Nutritional Requirements and Assessment. Body composition

Nutrition throughout Life Span

Nutrition and Public Health

Nutrigenomics

Economics of Nutrition

Analytical Methods

Clinical Aspects of Nutrition

Prevention of Chronic diseases - Diet and Health

Nutritional Disbalance

Substrates Used in Parenteral and Enteral Nutrition

Techniques of Nutritional Support. Enteral and Parenteral Nutrition

Nutritional Support in Critically Ill Patients

Nutritional Support in Patients with Chronic Diseases

Nutrition and Cancer

Exposure to Toxic Environment

Nutrition, Alcohol and Drug Abuse

The Eating Disorder Continuum

Endocrine Diseases

Nutrition in Disorders of Metabolism

5. Learning Management System

Learning Management System (LMS) software is a perfect tool for e-learning, providing optimum intercommunication and data compilation.

LMS software is used for monitoring and management of the training process in LLL system in Nutrition.

Details of the learning steps and main rules of system operation, monitoring, management and administration are described in Learner Manual for learners and in the Administrative Manual for administrators, tutors and experts.

6. Clinical Case Benefits:

The entry into a clinical case menu allows the learner to obtain immediate benefits from the system. The comparison of his personal clinical case with a corresponding clinical case solved by a specialist provides him the "know how" for his practice. In this way the learner improves his skills for better management of nutritional problems of his patients. This methodology is very beneficial for physicians as they can apply the adequate strategy in specific clinical situations.

As the system is provided on the web, there are no communication barriers and problems. The learner has the access to discuss the problem online with peers and tutors and to learn how the problem is solved by other specialists. Evidently, the learner will have better skills to manage more complicated situations and to improve his practice.

7. Benefits of Live Sessions

There are annual thematic courses of ESPEN and LLL live sessions organized by ESPEN and at various European universities, covering main topics of WEB-based LLL system.

List of the courses you can find on web page www.espen.org or on the link www.lll-nutrition.com/Courses/tabid98/default.aspx

Related modules are grouped into topics, which are delivered at live-sessions organized by ESPEN and held at partners' universities. All main topics of curriculum are covered at these courses over a period of 4-5 years. The schedule of the live courses is announced one year in advance so that interested learners will have the opportunity to prepare themselves beforehand using related online modules and then to participate in intensive training and certification at the live courses.

The advantages of the live session are: opportunity for communication, collaboration, discussion of casuistic clinical cases, certification of competencies of participants and immediate feedback for assessment of quality of educational content and tools of LLL programme.
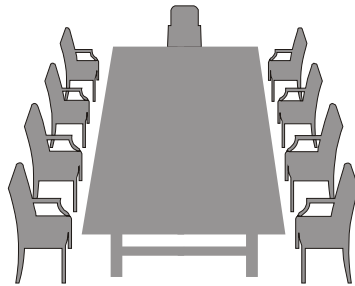
Chapter 3

Module Catalogue

List of topics and modules to be developed in the LLL system:

Code	Title	Credit
Topic 1 Metabolism of Macro- and Micronutrients		
EDU T1 M 1.1	Metabolism of Carbohydrates	**2**
EDU T1 M 1.2	Metabolism of Amino acids and Proteins	**2**
EDU T1 M 1.3	Metabolism of Lipids	**2**
EDU T1 M 1.4	Metabolism of Vitamins	**2**
EDU T1 M 1.5	Metabolism of Minerals and Trace elements	**2**
EDU T1 M 1.6	Metabolism of Antioxidants	**2**
EDU T1 M 1.7	Fibre, Pre- and Probiotics	**2**
EDU T1 M 1.8	Metabolism of Phytochemicals	**2**
Topic 2 Water and Electrolytes in Health and Disease		
EDU T2 M 2.1	Water and Electrolytes in health and disease	**2**
Topic 3 Nutritional Assessment and Techniques		
EDU T3 M 3.1	Nutritional Assessment	**2**
EDU T3 M 3.2	Body Composition	**2**
EDU T3 M 3.3	Energy Balance	**2**
Topic 4 Nutritional Requirements for Health throughout Life Span		
EDU T4 M 4.1	Nutrition in Neonates	**2**
EDU T4 M 4.2	Nutrition in Infancy, Childhood and Adolescence	**2**
EDU T4 M 4.3	Nutrition in Pregnancy and Lactation	**2**
EDU T4 M 4.4	Nutrition in Adults	**2**
EDU T4 M 4.5	Nutrition in Elderly	**2**
Topic 5 Malnutrition		
EDU T5 M 5.1	Undernutrition – Simple and Stress Starvation	**2**
EDU T5 M 5.2	Overnutrition	**2**
Topic 6 Nutritional Support in Severe Malnutrition		
EDU T6 M 6.1	Nutritional Support in Severe Undernutrition	**2**
EDU T6 M 6.2	Nutritional Support in Severe Obesity	**2**
Topic 7 Enteral/Parenteral Nutrition - Substrates		
EDU T7 M 7.1	Substrates for Enteral and Parenteral Nutrition	**2**
EDU T7 M 7.2	Immunonutrition in Enteral and Parenteral Nutrition	**2**
Topic 8 Approach to Oral and Enteral nutrition (EN)		
EDU T8 M 8.1	Indications and Contraindications for Enteral Nutrition	**3**
EDU T8 M 8.2	Oral and Sip feeding	**3**
EDU T8 M 8.3	Techniques of EN	**3**
EDU T8 M 8.4	Diets for EN	**3**
EDU T8 M 8.5	Monitoring and Complications of EN	**3**

Topic 9 Approach to Parenteral Nutrition (PN)		
EDU T9 M 9.1	Indications and Contraindications for Parenteral Nutrition	3
EDU T9 M 9.2	Techniques of PN	3
EDU T9 M 9.3	Compounding	3
EDU T9 M 9.4	Drugs and Nutritional Admixtures in PN	3
EDU T9 M 9.5	Monitoring and Complications of PN	3
Topic 10 Nutritional Support in Pediatric Patients		
EDU T10 M 10.1	Enteral Nutrition in Pediatric Patients	3
EDU T10 M 10.2	Parenteral Nutrition in Pediatric Patients	3
EDU T10 M 10.3	Nutritional Support in ICU Pediatric Patients	3
Topic 11 Organization of Nutritional Care. Ethic and Legal Aspects		
EDU T11 M 11.1	Organization of Nutritional Care (NST)	2
EDU T11 M 11.2	Ethical and Legal Aspects	2
Topic 12 Nutritional Support in Gastrointestinal Diseases – Compromised Gut		
EDU T12 M 12.1	Nutritional Support in Extensive Gut Resections (short bowel)	3
EDU T12 M 12.2	Nutritional Support in Gastrointestinal Fistulas	3
EDU T12 M 12.3	Nutritional Support in Inflammatory Bowel Diseases	3
EDU T12 M 12.4	Nutritional Support in Acute and Chronic diarrhea	3
EDU T12 M 12.5	Nutritional Support in IBS, Constipation	3
EDU T12 M 12.6	Nutritional Support in Diverticulosis	3
Topic 13 Nutritional Support in Liver Disease		
EDU T13 M 13.1	Nutritional Support in Acute Liver Disease, incl. Liver Failure	3
EDU T13 M 13.2	Nutritional Support in Chronic Liver Disease, incl. Liver Failure	3
Topic 14 Nutritional Support in Pancreatic Disease		
EDU T14 M 14.1	Nutritional Support in Acute Pancreatitis	3
EDU T14 M 14.2	Nutritional Support in Chronic Pancreatic Diseases	3
Topic 15 Nutritional Support in Renal Diseases		
EDU T15 M 15.1	Nutritional Support in Acute Renal Diseases incl. Renal Failure	3
EDU T15 M 15.2	Nutritional Support in Chronic Renal Diseases incl. Renal Failure	3
EDU T15 M 15.3	Nutritional Support in Renal Replacement Therapy (Haemodyalisis)	3
Topic 16 Nutritional Support in Injury and Sepsis		
EDU T16 M 16.1	Metabolic Changes in Injury and Sepsis	3
EDU T16 M 16.2	Nutritional Support in Sepsis	3
EDU T16 M 16.3	Nutritional Support in Trauma	3
EDU T16 M 16.4	Nutritional Support in Burns	3
Topic 17 Nutritional Support in the Perioperative Period		
EDU T17 M 17.1	The Stress Response and its Effects on Metabolism	3
EDU T17 M 17.2	Insulin Resistance and Glucose Control	3
EDU T17 M 17.3	Nutritional Support in the Perioperative Period	3
EDU T17 M 17.4	Nutritional Goals in the Perioperative Period	3
EDU T17 M 17.5	The Traumatized Patient	3
EDU T17 M 17.6	Facilitating Oral or Enteral nutrition in the Postoperative Period	3

Topic 18 Nutritional Support in Intensive Care Patients		
EDU T18 M 18.1	Metabolic Response to Stress, Energy Requirements	**3**
EDU T18 M 18.2	Use of Macronutrients in ICU	**3**
EDU T18 M 18.3	General Principles of Prescription and Management in ICU	**3**
EDU T18 M 18.4	Routes of Nutrition in ICU	**3**
EDU T18 M 18.5	Use of Special Substrates in ICU	**3**
Topic 19 Nutritional Support outside the Hospital: Home Parenteral Nutrition (HPN) in Adult Patients		
EDU T19 M 19.1	Indications and Epidemiology	**3**
EDU T19 M 19.2	Training and Monitoring	**3**
EDU T19 M 19.3	Venous Access for Home Parenteral Nutrition	**3**
EDU T19 M 19.4	HPN in Cancer Patients	**3**
EDU T19 M 19.5	Guidelines for Home Parenteral Nutrition Support in Chronic Intestinal Failuin Adult Patients	**3**
EDU T19 M 19.6	Metabolic complications of HPN in chronic intestinal failure adult patients	**3**
Topic 20 Nutritional support in cardio-vascular diseases		
EDU T20 M 20.1	The place of Nutrition in the prevention of CVD	**3**
EDU T20 M 20.2	Nutrition in CVD - special diets	**3**
EDU T20 M 20.3	Nutritional support in acute coronary events	**3**
Topic 21 Nutrition in Diabetes		
EDU T21 M 21.1	Nutrition in Prevention and Management of Diabetes Mellitus	**3**
EDU T21 M 21.2	Nutritional Support in Diabetes	**3**
Topic 22 Nutrition in Lipidemias		
EDU T22 M 22.1	Dislipidemias and Nutrition	**3**
EDU T22 M 22.2	Adaptive Changes of Lipid and Lipoprotein Metabolism	**3**
Topic 23 Nutrition in Obesity		
EDU T23 M 23.1	Nutrition in Prevention and Treatment of Obesity	**3**
Topic 24 Nutrition in Metabolic Syndrome		
EDU T24 M 24.1	Nutrition in Prevention and Treatment of Metabolic Syndrome	**3**
EDU T24 M 24.2	Frontiers in Metabolic Syndrome Research	**2**
Topic 25 Nutritional support in Neurological diseases		
EDU T25 M 25.1	Nutritional Support in Acute Stroke	**3**
EDU T25 M 25.2	Nutritional Support in Chronic Neurological diseases	**3**
Topic 26 Nutritional support in Cancer		
EDU T26 M 26.1	Pathogenesis of Cancer Cachexia	**3**
EDU T26 M 26.2	Treatment of Cancer Cachexia	**3**
EDU T26 M 26.3	Nutritional Support during Radiation Treatment	**3**
EDU T26 M 26.4	Nutritional Support during Chemotherapy	**3**
Topic 27 Nutritional support in AIDS		
EDU T27 M 27.1	Nutritional Support in AIDS	**3**
Topic 28 Nutrition in Allergic Diseases		
EDU T28 M 28.1	Nutrition and Food Allergy	**2**
Topic 29 Nutrition in Hereditary Diseases		
EDU T29 M 29.1	Nutrition in Phenylketonuria	**2**

EDU T29 M 29.2	Nutrition in Lactose Intolerance	2
EDU T29 M 29.3	Nutrition in Celiac Disease	2
EDU T29 M 29.4	Nutrition in Cystic Fibrosis	2
Topic 30 Nutrition in Skeletal and Joint Diseases		
EDU T30 M 30.1	Nutrition in Prevention and Management of Osteoporosis	2
EDU T30 M 30.2	Nutrition in Prevention and Treatment of Arthritis	2
Topic 31 Nutrition in Behavioral Disorders		
EDU T31 M 31.1	Nutrition in Anorexia neurosis	2
EDU T31 M 31.2	Nutrition in Bulemia	2
EDU T31 M 31.3	Nutrition in alcohol and drug abuse	2
Topic 32 Food Safety		
EDU T32 M 32.1	Food Safety. Exposure to Toxic Environment	2
Topic 33 Nutrition and Public Health		
EDU T33 M 33.1	Nutrition and Public Health	2
Topic 34 Nutrigenomics		
EDU T34 M 34.1	Nutrigenomics –Research and Approaches	2
EDU T34 M 34.2	From Nutrients To Genes: Response to Nutrients – Gene Polymorphism	2
Topic 35 Economics of Nutrition		
EDU T35 M 35.1	Economics of Nutrition	2

Chapter 4

Learner Manual

The Learner Manual is designed to help the learners commence their training and to provide interested visitors an insight into how the system works.

The Learner Manual provides learners with clear, complete, and timely information on the curriculum, modules, courses and certificate requirements, nature of interaction with tutors and administrators, prerequisites, equipment requirements, costs and payment policies.

1. Educational Web portal for Self-training

This is a short version of the LLL system in Nutrition.

Internet address: www.lll-nutrition.com/edunutrimed

The portal provides free access for certain modules, which can be taken free before the learner is sure that this program fits his needs. The learner can go through the online module key points, learning objectives, training content, clinical cases, and quizzes. The learner has access to self-training, solving quizzes and clinical cases. Training through this access is not interactive. The learner's progress is not followed up; he is not assessed and will not be certified. This portal is for online training and self-preparation. This portal is very suitable as an adjunct to the live sessions.

When the free-learner is sure that the selected module fulfils his needs, he can register for the live course to accumulate credits for CME.

1.1 Rules for application and admission:

Eligibility:

Medical Doctors and Students; Health Related Professionals
No age or geographic limitation
Working language: English

1.2 Learner registration

For free access to modules you will need to take a minute to create a new account for yourself on this web site. Here are the steps:

1. On the web page www.lll-nutrition.com/edunutrimed.
Click on Register or use the link click here

2. Fill in the registration form with your personal data, after that click on the button Register at the bottom of the page.

3. An email will be immediately sent to your email address.

4. Read your email, in which will find your individual verification code. You need the code only for the first access to the system.

Dear Svetlana Alexander,

We are pleased to advise that you have been added as a Registered User to the EduNutriMed portal website. Please read the following information carefully and be sure to save this message in a safe location for future reference.

Portal Website Address: lll-nutrition.com/edunutrimed
Username: svetic
Password: svetic
Verification Code: 1-143

Please take the opportunity to visit the website to review its content and take advantage of its many features.

Thank you, we appreciate your support...

EduNutriMed

5. Once again go to the website www.lll-nutrition.com/ edunutrimed.

6. Fill in your username, password and verification code.

7. Click on Login.

8. Your account will be confirmed and you will be logged in.

9. If your registration was successful, the sign "CONGRATULATIONS" will appear to the left of the screen. Now your Home page has access to the complete Main Menu.
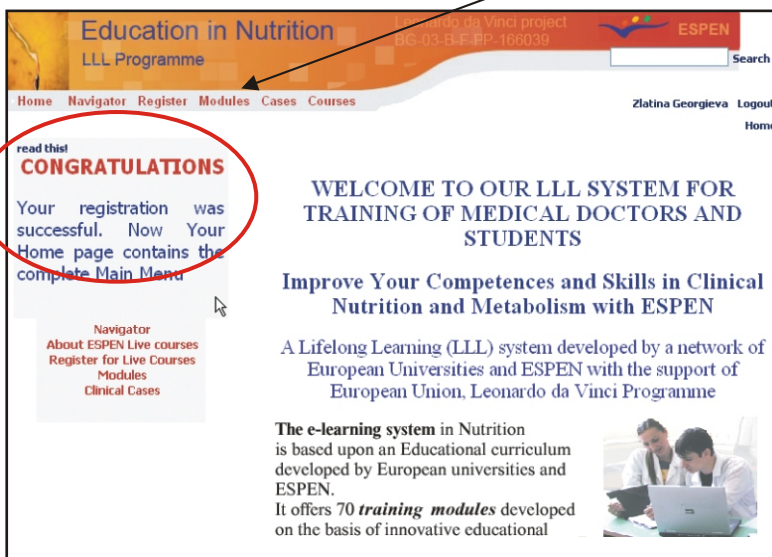
1.3 Access for Self-training

1. To become acquainted with the LLL system click on Navigator from Main Menu.

You may select options of your interest from the menu bar on the left.

You will find the description of the system in **System Philosophy** and **General Principles.**

You will find the learning steps detailed in **Learner Manual** and Learning content in **Module Catalogue.**
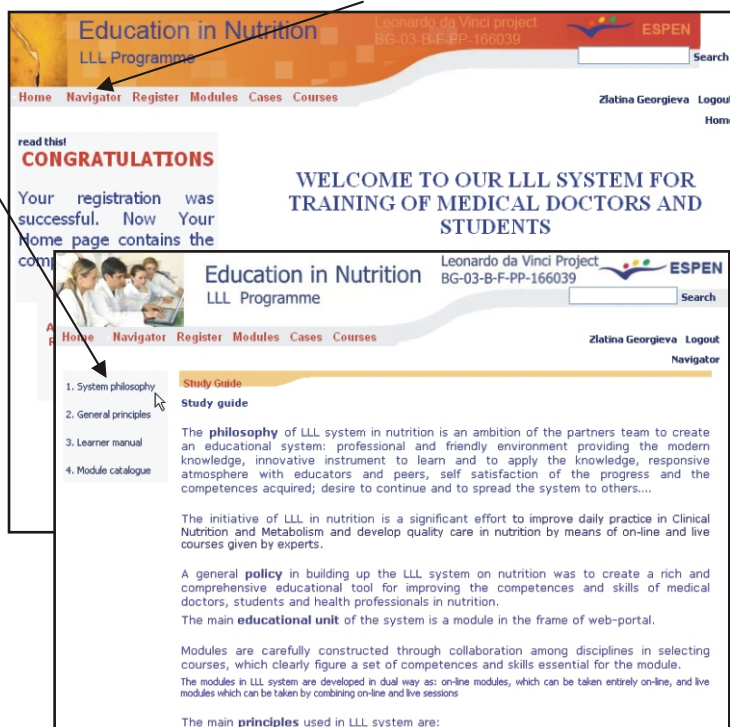
2. To start your session, click on `Modules` from Main Menu and open a page with Module Menu. Modules on related subject areas are grouped into 'Topics' making it easier for the user to select modules in a particular field of interest.

3. Go to `List of Modules` and make your selection.

4. To open a module of your interest, double click on the Topic and then select the module.

5. On the Module page you will find the information displayed in 3 columns:

The left column is used for navigation within the module content.

The central part contains the main information of the module.

The right column provides references and links to guidelines and presentations.

You can obtain a printable version of the module by clicking the icon `print`.

To go back to the List of Topics and modules. Click on Modules from the Main Menu on top of the screen.

To go back to Home page click on Home from the Main Menu.

6. Each module contains tests/ quizzes for self-assessment.

When using a quiz you can find your score in the upper right side of the page. If your score is under 70% we advise you to go through the module again and fill in the gaps in your knowledge.

7. Each module also contains unsolved clinical cases with questions. You are advised to solve these cases in preparation for the live sessions because similar cases will be discussed and will be part of the assessment.

8. If the selected module fulfils your needs and requirements you are invited to join the live training in that topic at the annual live sessions. For information about the scheduled live sessions visit the website or you may contact the Administrator at edunutrimed@gmail.com

If you have any further questions or difficulties while using this web-based educational system you may contact the system administrator at edunutrimed@gmail.com. The system administrator will provide you with the required assistance and support.

2. Educational Web portal of LLL System in Nutrition (e-learning university)

Internet address: www.lll-nutrition.com/edu

Web portal of LLL system contains all the tools and resources required for e-learning university: study navigator to guide the learning process, software and resources for the learning management system (LMS), core curricula, training content; means for innovative training; tools for assessment, credit accumulation and certification.

The learner manual helps the learner to become acquainted with the learning "philosophy", to choose proper training methods and approaches, to organize individual sequence of teaching and learning activities, to plan the educational goals according to the needs and availability, to plan the average length of the training (per module and overall). It also describes the communication methods, the pedagogical approaches: tutoring, monitoring, supervision; methods of assessment and certification.

You have access to this manual online through the **Study Guide** button on the home page.

2.1 Rules for application and admission:

Eligibility:

Medical Doctors and Students; Health Related Professionals

No age or geographic limitation

Working language: English

2.2 Learner registration

Two types of registration are available:

> Registration for self-training and assessment;
> Registration for certification and credit accumulation for CME or the ESPEN Diploma in Nutrition.

Before you can do anything in the LLL system you have to create your individual account by registering for the system.

1. Go to the web page www.lll-nutrition.com/edu. If you have already been registered enter your Username and Password and click on **Login.**

2. If it is your first time click on **Start now by creating a new account.**

3. Fill in the registration form with your details, including your username and a password.

4. An email will be immediately sent to your email address.

5. Read your email, which will provide you the first access to the system.

6. To confirm your new account, please click on the link that is given in the email.
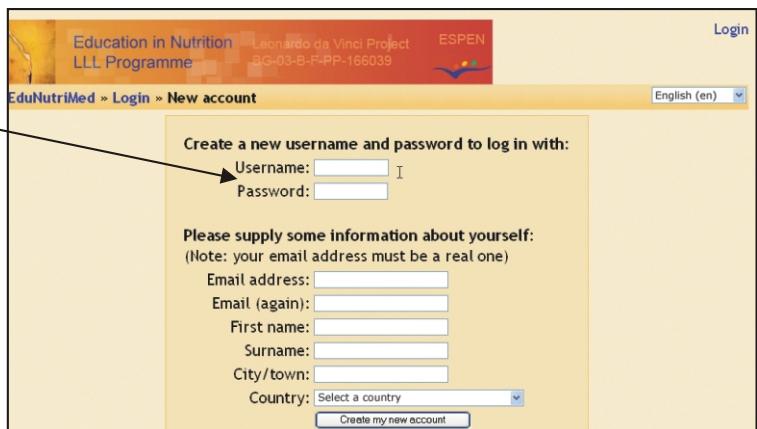
2.3 Course/Module enrolment

1. You will see this webpage after clicking on the link provided in your email. Your account is confirmed and you are logged in.

2. Now, to enter the educational content Click on **Courses.**
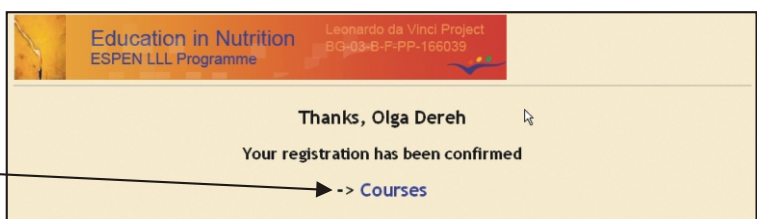
3. To start your session you can choose from: **Topics/Modules**, **Cases** or **Courses** Each Topic contains 4-6 modules.

If you do not wish to enrol for all the modules in one Topic, you are advised to inform the Administrator/Tutor by email.
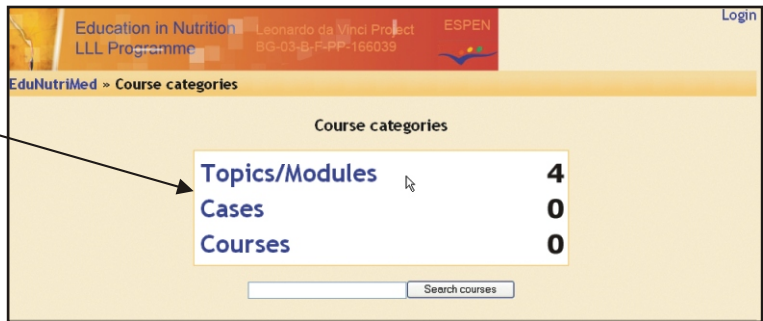
4. If you click on **Topics**, you will go to the Topic Catalogue. Click on a Topic of your interest.

5. To enroll in the Topic/Module click on **Yes** from the window that appears.

6. An email will be immediately sent to your email address with a link to the Login page and to your individual profile.
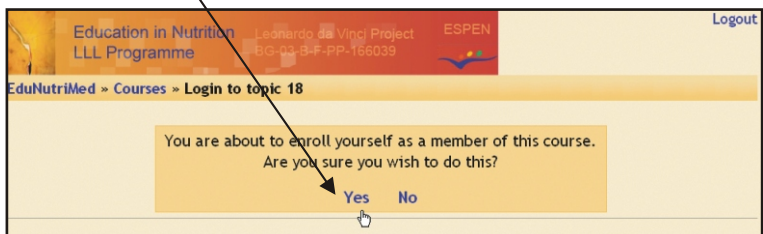
2.4 Profile editing

Prior to starting the Course/Modules you will need to update your profile because it will form the basis for developing your personalized portfolio and enable the system to follow and evaluate your progress. **Without a complete profile it is not possible to award any certification.**

1. To go to your individual profile, write your password and click on **Login.**

2. To fill in you profile details. Click on **Edit profile.**

Note - The tutor will help you in preparing your personalized portfolio based on the information you provide in your profile. To enable your tutor to provide you with maximum guidance so that you can learn exactly what you want to, it is strongly recommended to fill in all the details of your profile.

3. In the field: **Description** fill in the following information:

Qualification

Specialty
Field of Interest
Modules of Interest
Courses of Interest

if you have any other specific interests or requirements, you can list them here.

4. Click on **Update profile** in the bottom on the right.

5. You will go to the page with your updated profile.

6. Select the **enrolled topic** from the listed Courses under the Main Menu on the home page.

7. You will go to your Topic / Module activities page with the list of modules in that Topic.

8. To start your training session click on the module title.

9. If you do not wish to start your module, you may choose another activity or go back to the Home Page by clicking on **EduNutriMed** at the upper-left corner of the page.

2.5 Assignment

Assignments are a simple, useful ways to collect more authentic responses from the students than is possible with the quiz engine. An Assignment is a specific type of activity that allows you (learner) to develop a personalized task assigned by tutor: topics for individual work, essays, reports etc.

After the tutor gives you an assignment, you will find it on the **Topic activity page.** You are supposed to submit the report on the assignment according to the tutor's requests using a creative approach. You can submit it electronically by uploading a file of any type (Word, Power Point, etc.) The assignment report can also be sent by postal mail by sending a paper copy. Successfully completed assignments are awarded credits.

1. On the **Topic activity screen** you can see your assignments. Click on the assignment title.

2. You will see the **Assignment screen**:

3. After you have prepared your report, click the **Browse** button to find the file with the report that you have to upload.

4. Now click **Upload this file** to finish.

Your tutor will receive your report, will check it and will send you a link on your e-mail address. Click on the link to open a screen, where you can find the evaluation and remarks of your tutor.

You can upload only one file. If you repeat the upload procedure you will replace your previous submission.
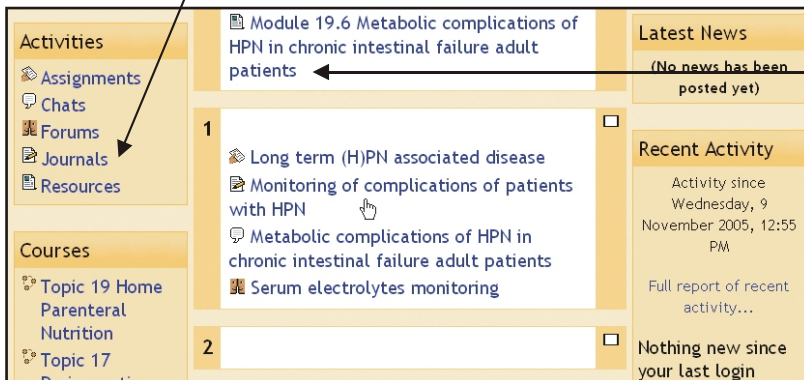
2.6 Journal

Journaling is a popular educational tool to encourage your - a learner self-reflection in the learning process. The tutor may create a Journal for the learner and assign various tasks for completion. It could be a short description task or may consist of questions and answers, such that they can be easily filled in the Journal fields. For example your Journal task could be to solve a Clinical Case. This option differs from the Assignment activity, where the learner is supposed to develop a larger piece of information: report, essay or research. The Journal can be seen by you the learner and your tutor only. Here you can see the activity assigned for you by your tutor and then write or edit your replies to the assigned task.

The Journal is then assessed by the tutor. Only the teacher has the ability to assign a grade (there is no peer review). The learner is allowed to make a new version after corrections made by the tutor.

Journal activities provide you with extra credits.

1. Click on the **Journals** button in the Activities menu. Your individual task in Journal is created by your tutor.

2. Click on Journal's title and open your educational task.

The following example shows a task on "Monitoring of complications of patients with HPN" for the Module 19.6 "Metabolic complications of HPN in chronic intestinal failure adult patients" with questions that have to be answered.

EduNutriMed » topic19 » Journals » Monitoring of complications of patients with HPN

Which laboratory parameters do you need for Monitoring of complicationsof patients with HPN?

Make a description of laboratory parameters and justify their usefulness.

Start or edit my journal entry

You have not started this journal yet

You are logged in as Olga Dereh (Logout)

3. Click on **<u>Start or Edit my journal entry</u>** to give your answers to the questions.

4. Write your answers and comments in the blank field and click **<u>Save changes.</u>**

About the HTML editor

Malnourished patients at risk for refeeding syndrome should have **serum phosphorus, magnesium, potassium and glucose levels** monitored closely at initiation of SNS. **Blood glucose** should be monitored frequently upon initiation of SNS, after any change in insulin dose, and until measurements are stable. **Serum electrolytes (sodium, potassium, chloride, and bicarbonate)** should be monitored frequently upon initiation of SNS until measurements are stable.

Path: body » span » span » span » font

Formatting: Moodle auto-format

Save changes   Revert

Your message will be sent to your tutor for assessment. The Tutor will make the corrections and will send a link to your e-mail with access to his remarks and evaluation.

2.7 Chat

The Option Chat takes you to a chat room. It is used for real-time discussions. Chatting is a very efficient way to discuss things in real-time. Synchronous phases are helpful to support the social atmosphere; they could be complementary, but no participant should be excluded from the study process because he or she cannot be online at given times.

1. Go to the **Topic activity screen**. In this example you can see on the ⟦Calendar⟧ that the date 20th November is marked as a **course event**. Point the mouse at this date to see an icon and an advertisement of the scheduled Chat event.
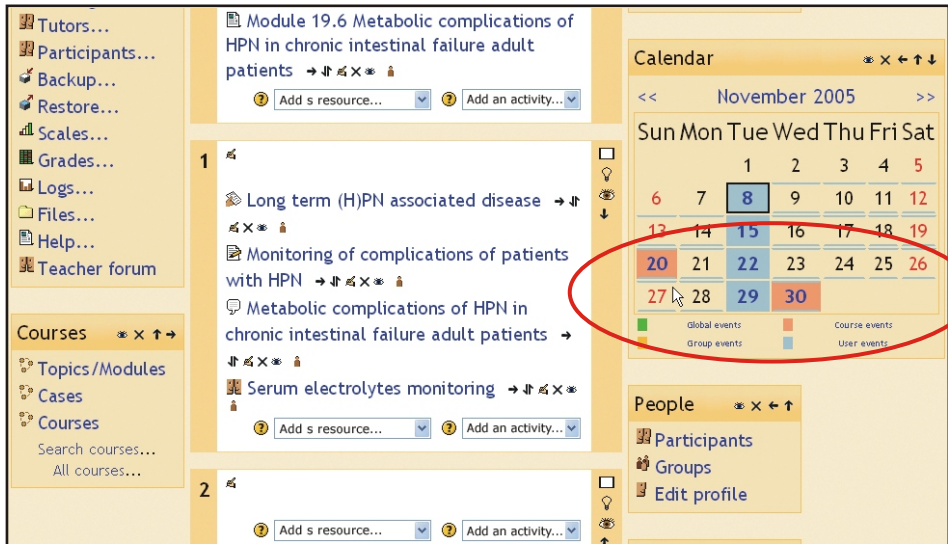

2. Click on the date to see the **Chat advertisement screen**.

This is an example of the Chat for the "Topic 19 Home parenteral nutrition".
Chat title is "Metabolic complications of HPN in chronic intestinal failure of adult patients".
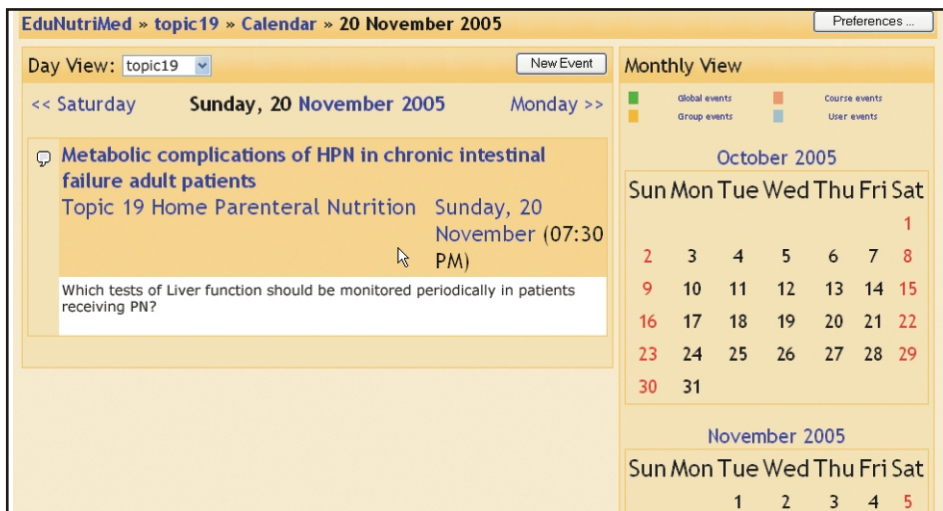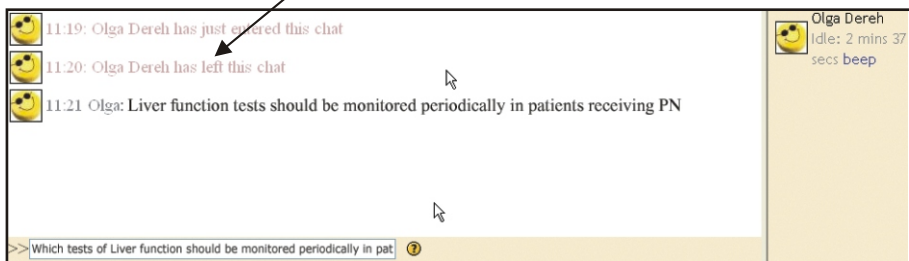

3. If you want to enter the chat room, go to the **Topic activity screen** and click on the chat name. You will see the Chat screen.

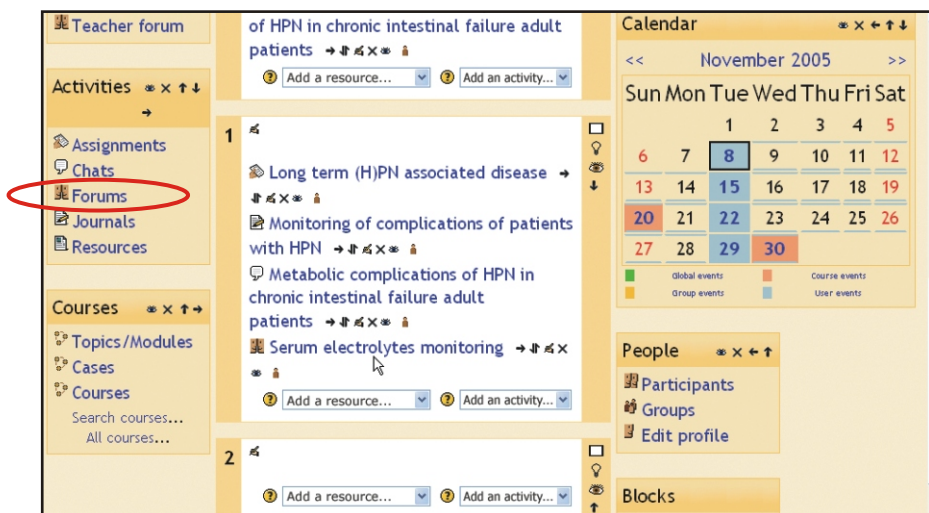4. Click on **Click here to enter the chat room** to enter the chat room.
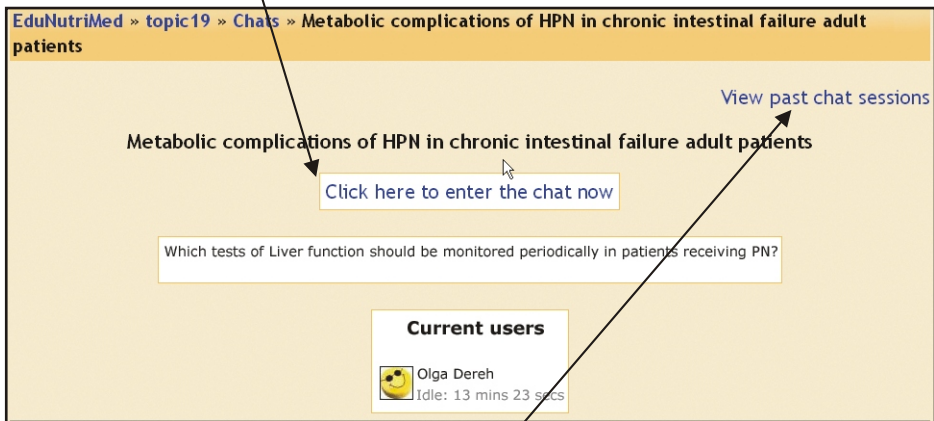
5. Click on **View past session** to see a past session.

6. This is a chat session in progress.

2.8 Forum
This is basically an online bulletin board used to discuss various topics. Asynchronous discussions

in forum don't require that everyone is online at the same time. Besides the time benefits, the asynchronous approach provides an archive of all discussions throughout the course to be saved in learners profiles. Another benefit is that such discussion enables certain students to participate who would normally be excluded from live discussions, either because they are quiet or they don't think as fast.
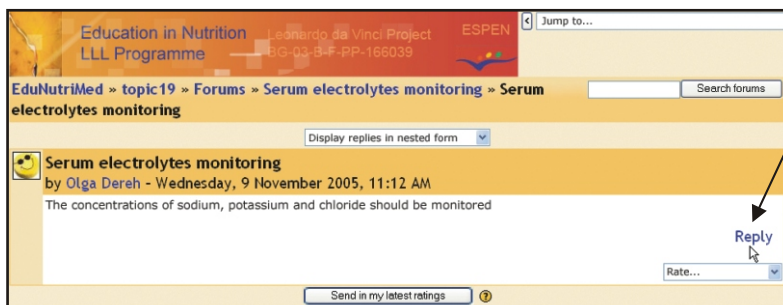
1. If you want to discuss topics of your interest click the **Forum** button in the Activities menu on the left side of the Topic activities page.

2. You will then see the 'Forums' page with a list of ongoing discussions. Click twice on the topic of your interest and enter the **Discussion** page.
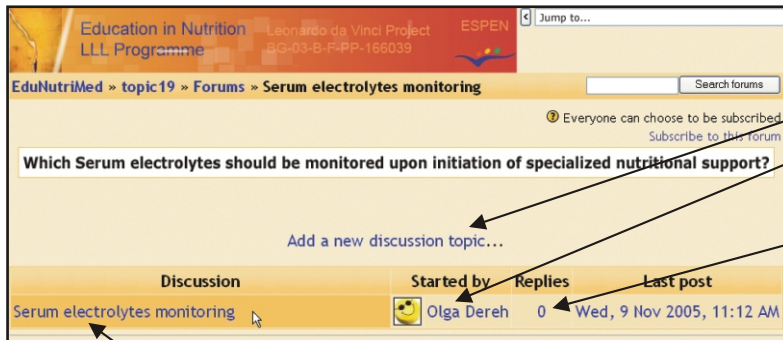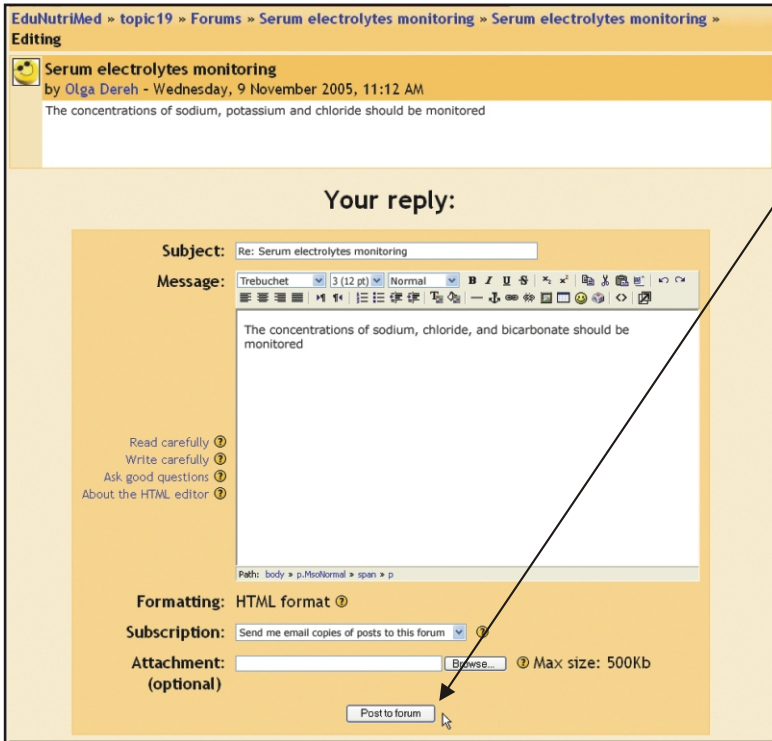

3. On the Discussion page you will find several options:

- Add a new topic;

- view the profiles of participants in discussion;

- view existing replies;

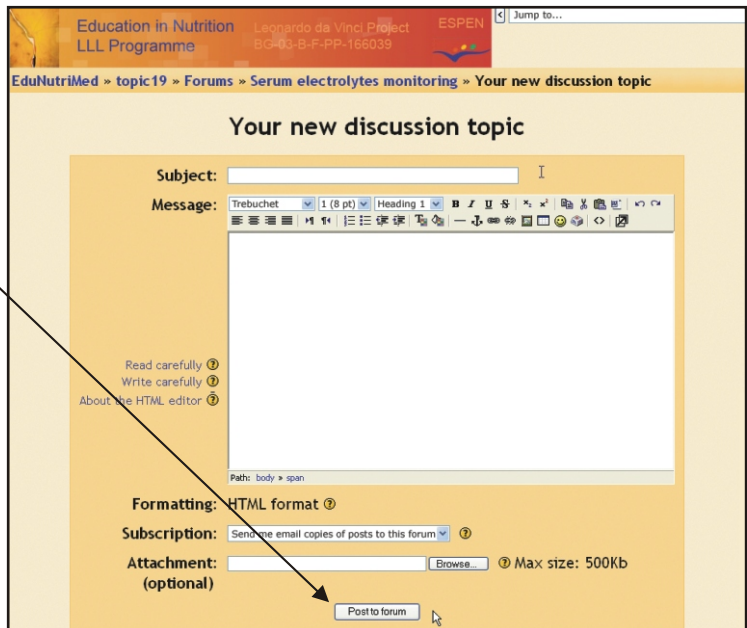4. To view a post click on an item from **Discussion.**

5. If you want to respond to an ongoing discussion click **Reply** on the left of the screen.

Serum electrolytes monitoring
by Olga Dereh - Wednesday, 9 November 2005, 11:12 AM
The concentrations of sodium, potassium and chloride should be monitored

Your reply:

Subject: Re: Serum electrolytes monitoring

Message: Trebuchet | 3 (12 pt) | Normal | **B** *I* U S x₂ x²

The concentrations of sodium, chloride, and bicarbonate should be monitored

Read carefully ⑦
Write carefully ⑦
Ask good questions ⑦
About the HTML editor ⑦

Path: body » p.MsoNormal » span » p

Formatting: HTML format ⑦
Subscription: Send me email copies of posts to this forum
Attachment: [Browse...] ⑦ Max size: 500Kb
(optional)

[Post to forum]

6. Write your message in the blank field and click **Post to forum.**

7. If you want to start a new discussion click on **Add a new topic** on the page described in point 3.

8. Write your message in the window and click **Post to forum.**

Education in Nutrition
LLL Programme
Leonardo da Vinci Project
BG-03-B-F-PP-166039
ESPEN

Jump to...

Your new discussion topic

Subject:

Message: Trebuchet | 1 (8 pt) | Heading 1 | **B** *I* U S x₂ x²

Read carefully ⑦
Write carefully ⑦
About the HTML editor ⑦

Path: body » span

Formatting: HTML format ⑦
Subscription: Send me email copies of posts to this forum ⑦
Attachment: [Browse...] ⑦ Max size: 500Kb
(optional)

[Post to forum]

If you have any further questions or difficulties while using this web-based educational system you may contact the system administrator at edunutrimed@gmail.com. The system administrator will provide you with the required assistance and support.

3. Rules for Assessment, Certification and Quality Control of the Educational Web portal of LLL System in Nutrition

3.1 Learner e-dossier (profile)

The success of learner is followed by a tutor and the administrator and all the results of his progress and certification are collected in the Learner e-dossier (profile).

The Learning administrator maintains an individual record for each learner, including an individual portfolio. This file contains a record of all the educational activities of learner: the modules visited, modules enrolled, on line self-training, the longitude of training, scores, clinical cases solved, quizzes done and the score of each quiz, relevant correspondence with administrator and tutors, admissions to the live sessions, special courses and online sessions for case discussion and PBL and all other information deemed necessary for the proper documentation of the learner's progress.

The learner profiles will remain confidential and the learner's identity will be held in confidence, including intrinsic system administrative reports.

3.2 Learner certification: Rules and procedure

Certification is provided at several levels:

> **Certificate** in one specific field/topic for one educational module with credits in accordance with the specific national CME system;
> **Certificate** for a live course on a specific topic;
> **Diploma** in "Clinical Nutrition and Metabolism" (ESPEN). Credit accumulation from different modules provides the opportunity not only to collect them for CME, but also to get the European Diploma in Nutrition.

Certification methodology for each module

> **Accumulative certification online**: collection of grades from quizzes and tests for continuous assessment of theory and clinical cases; materials prepared by the learner according to the personalized program; reports, research and developed clinical cases.
> **Attending live courses**
> **Final test**

Rules for Credit accumulation

The modules are assigned credits which the learner receives in case he/she covers the module requirements. Credit accumulation from different modules provides the opportunity not only to collect them for CME, but also to get the European Diploma in Nutrition of ESPEN.

There are two kinds of modules - mandatory and optional. A considerable flexibility exists regarding the optional modules. It is recommended that only those optional modules be chosen which are appropriate for the individual's specialty. The system provides a variety of training approaches which are specific to particular modules; some modules are online and others are live modules.

The personalized portfolio depends on the learners aim.

1. For CME the learner is at liberty to select modules according to his own needs and preferences.

2 For the ESPEN European Diploma in Nutrition a total of 120 credits, the equivalent of a Master level course are needed. The credits should be distributed according to the special requirements as detailed below:

> 8 basic mandatory topics for 60 credits: Topic 1 (at least 6 modules), Topic 2, Topic 3, Topic 4 (Module 4.4 plus one individually selected module), Topic 7, Topic 8, Topic 9 and Topic 11.
> 6-8 optional individually selected topics for 60 credits (the modules from these topics are also individually selected). Altogether 20-25 modules.
> Participation at the courses: LLL session organized by ESPEN at an annual congress is obligatory for certification and credit.
> From total 120 credits at least 50 must be from live modules.
> Modules are ameliorated by specific educational activities which bring additional credits. These activities include reports and clinical case studies developed as special activities (Assignments, Journals).
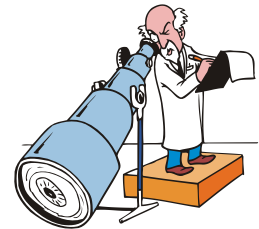
Note - To obtain the ESPEN European Diploma in Nutrition you have to enrol for the program before starting credit accumulation. In 'Registration for Certification' you have to mention that you will be collecting credits for the Diploma.

3.3 Evaluation of curriculum and training process by learners
System Quality Control.

Learners are expected to be active participants in the system quality control, to provide regular feedback about training process efficiency, training methods innovativeness and adequacy, curricula coherence with their needs, tutor activity and their individual outcome, progress satisfaction.

The LSM provides a mechanism for the evaluation by learner of the entire LLL system and its components: (modules, clinical cases, quizzes, live sessions), courses and tutors.

The data from these surveys and evaluations will be used for the improvement of system components and updating the educational curricula.

Examples of these data include such things as: whether a module content is of high quality and updated; effectiveness; whether leaning objectives were clearly stated and followed, whether there was adequate and effective feedback; identification of the most important sources of learning; understanding competency relevance; and standard data about learner: field of practice/specialty.

4. Live Sessions

Live sessions represent formal courses of 3-4 hours generally organized during the annual ESPEN congress, even though they may also be organized outside the ESPEN congresses (e.g. ESPEN Courses - CCN, ACCN and local national congresses partners' universities) by the Course Director. Each live session is related to a module available on the website. Module coordinator will choose speakers for the course. MDs only are eligible for participation (This rule is to be changed in the future but is aimed at facilitating the course recognition by the European Union at the beginning). The main purpose is to supplement the e-learning programme by a tutor-teaching.

The learners will be given a clinically oriented course, so that they are prepared to change their clinical practice "on the following day". The standard format is to spend 2 hours on reviewing the web module and then 1-2 hours discussions on clinical cases, when the learners can obtain clinical experience from the tutors.

Each live session consists of 5 components:

> lectures;
> visual material;
> case reviews;
> printouts of all presentations including the power point presentations;
> nominative self-assessment questionnaire.

Web Modules are available after free registration on the internet, but Live sessions and formal examination require paid registration. Each web module and each live session provides a given number of credits which after a certain number will allow certification at two levels: the program has a defined structure and the course director is responsible for its management. The web modules and the live sessions are organized by the module coordinators and session chairs, respectively. The web address of the program is: **www.lll-nutrition.com/edunutrimed**

Chapter 5

Structure and Administration of Educational System

1. The structure of the system:

The structure of the e-learning system for LLL is developed on principles similar to those of an educational institution providing formal training. It is based on an integrated formation of educators, learners, administrative, social and scientific collaborators. All these factors are organized to work together in convenient groups to realize the three main responsibilities of an e-learning university: teaching, research and social activities in favour of society. Only when applied in coherence these 3 main factors provide the opportunity for professional improvement and raise the qualification in a modern knowledge based society. In this respect the structure of the e-learning university creates groups responsible for these activities.

In this structure, the educators and the learners could easily find their place. Both groups would be formed to take initiatives promoting the e-learning university in such a way that the three principles: teaching, research and social activities would always be present. Educators by modifying their lessons regularly, taking into account the scientific progress, the new learning techniques and the needs of the population. Learners by acquiring an attitude making them eager to adapt these three principles into their lifestyle and in their professional lives. In the field of nutrition these principles are of primary importance as a significant evolution of the progress in medicine is going to be through new applications of nutritional scientific evidence.

The following structure is developed for optimal functioning of LLL system:

1.1. LLL Directorate is the legislative body of the LLL system. It is selected from among the partners' authorized representatives. The LLL directorate is assisted by a coordinative committee and by an administrative committee.

The LLL directorate is responsible for overall system management including:

> system coordination;
> taking decisions on a political level;
> providing continuous control of the coordinative and administrative committees;
> system monitoring ;
> system updating;
> financial control;
> system quality control.

1.2. Coordinative committee of educators is selected from among the representatives of educators: tutors, creators of educational content and experts.

The coordinative committee of educators is responsible for the following:

> development of core curricula;
> development and management of training content and training procedure;
> development of chapters N 3, 4, 5 and 6 of General Guidebook for the system;
> development of study manual and Module catalogue;
> continuous monitoring of tutors and creators;
> continuous quality control of training content and training procedure;
> providing feedback of the system control to educators.

1.3. Administrative committee

This committee is selected from among the representatives of partners: administrative officers, technicians etc.

general system administration
quality control:
- monitoring of internal quality control process;
- organization and monitoring of external quality control process;
- development of questionnaires for quality.

2. Duties and Responsibilities of Administrators and Tutors

2.1 Administrator of learners:

general administration and management of training process;
learners e-dossier, their programmes, portfolios and progress;
follow up of learners progress: number of modules enrolled, number of module cleared, the results of the tests, quizzes, solved clinical cases, individual assignments;
monitoring of certification;
communication with learners, concerning administrative problems of training;
monitoring of learner feedback about learning process, tutoring and educational content;
advising for specific problems (e.g. when learners lack skills to work online,….).

2.2 Administrator of tutors:

monitoring of tutor activity and feedback to coordinative training committee;
information about learners progress;
information about learners' problems with tutors;
collection of feedback about tutor activity from learners;
administrative support of tutors: programme scheduling;
collaboration with tutors aiming better learning outcome.

2.3 Tutors:

monitoring of training process;
communication with learner using emails, forum, chatting, "dialogs";
enrolment into the modules;
monitoring of learners' training and success;
monitoring of online sessions, case discussions, PBL sessions;
follow up of self-training of learner and learner groups;
individual assignments of learners;
monitoring of individual training and individual assignments, consulting;
advising learners with training problems, individual problems with module content;
quizzes, clinical cases, individual assignments;
collection of feedback from learners about LLL system.

2.4 Module authors:

creation of scientifically grounded and updated training content;
collecting of information on the topic for advanced training (individually assigned);
creation of tests for self-training and final examination;
development of clinical cases;,
development of individual assignments.

2.5 Experts:

module content modernisation and checking for regular updating;
innovativeness of the system;

quality control of educational content and training methods;
quality control of training and certification procedure;
coherence of training content to the aims and objectives of the system;
adequacy of tests to the training content;
adequacy of clinical cases to the training content;
adequacy of training content and educational goals of learners;
adequacy of training approaches to the educational needs of learners.
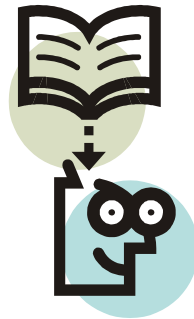
Chapter 6

Tutor Manual

This tutor manual is designed to help the tutors impart training via the web based educational system and to provide interested visitors an insight into how the system works.

The tutor manual helps the tutor and administrator to organize the training process on the Web-portal according to the needs and availability of different learners. It describes the types of communication; the pedagogical approaches; methods of tutoring, monitoring, supervision, assessment and evaluation.

1 General Rules.

1.1. Educational Web portal for Self-training

This is a short version of the LLL system in Nutrition. This portal is for online training and self-preparation. This portal serves as an adjunct to the live sessions.

Internet address: www.lll-nutrition.com/edunutrimed

Tutor activities for educational web portal for self training are limited to:

> Development of online modules for self-training of participants in the live sessions.
> Organizing live session on the specified topic and prepare relevant materials for intensive training and certification: short presentation; clinical cases; assessment materials.

For uploading the designed modules to this web portal the tutor should contact the administrator at edunutrimed@gmail.com

1.2. Educational Web Portal of LLL System in Nutrition.

Internet address: www.lll-nutrition.com/edu

The web system "EduNutriMed" is based on a modular principle. Tutors are responsible for monitoring the training process in the frame of their topics or modules.

The tutors/teachers receive a special access "Editing Permissions" in their modules for the creation of training content and training activities.

Tutors are supposed to monitor the entire training process: to plan the sequence of educational activities and to follow up the success of participants/learners:
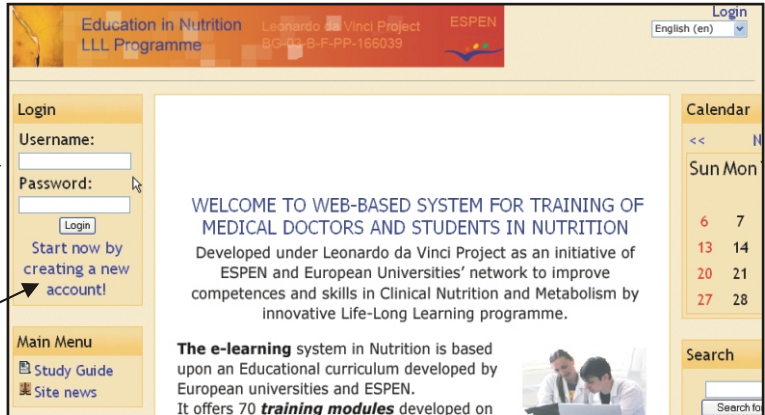
> to organize the learners enrolled for their modules into groups;
> to assign group and individual tasks for learners: assignments, journals, clinical cases, research tasks;
> to organize forums and online chat sessions;
> to evaluate learner success and to send feedback;
> to collaborate with administrative and coordinative committees for better organization of the training process.

2 Tutor registration
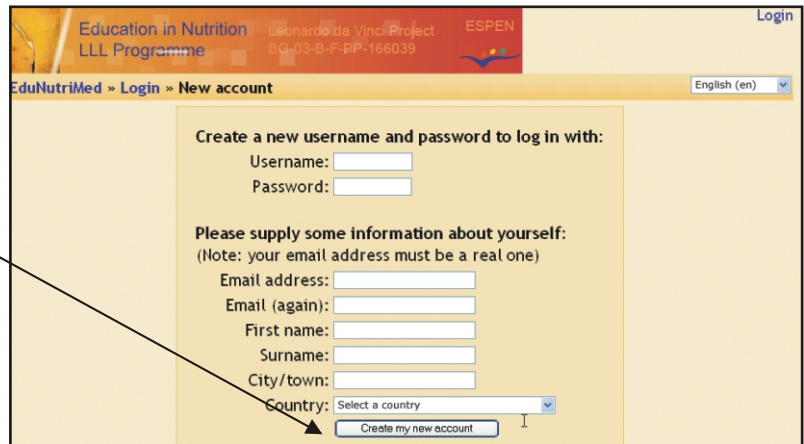
Before you can do anything in the LLL system you have to create a New Account. The New Account registration form is accessible from the Home page.

1. Go to the web page www.lll-nutrition.com/edu. If you have already been registered enter your Username and Password and click on **Login.**

2. If it is your first time click on '**Start now by creating a new account**'.

3. Complete New Account registration form and click on **Create my new account**.

4. An e-mail will be immediately sent to your e-mail address with a link. Click on the link and enter the system and confirm your registration.

5. Once you have created a New Account the system administrator will change your account login permissions for tutorial access.

After you have the permission of system administrator, you can start your activities.

3. Accessing the Topic
Modules on related subject areas are grouped into 'Topics' making it easier for the user to select modules in a particular field of interest.
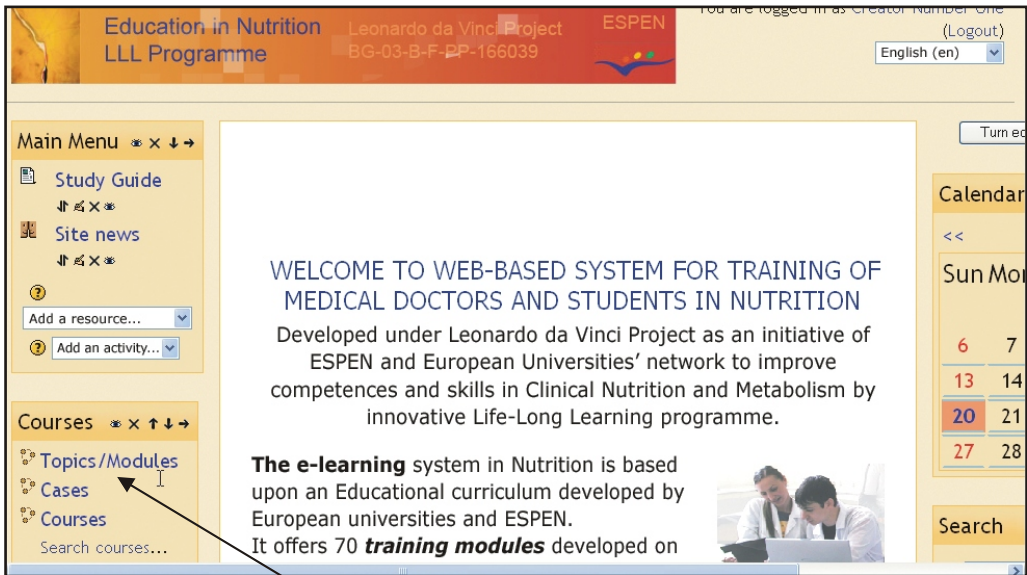
1. On the Home page click on **Topics**, to go to the list of Topics in the system.

2. Click on the Topic/Module that you are responsible for.
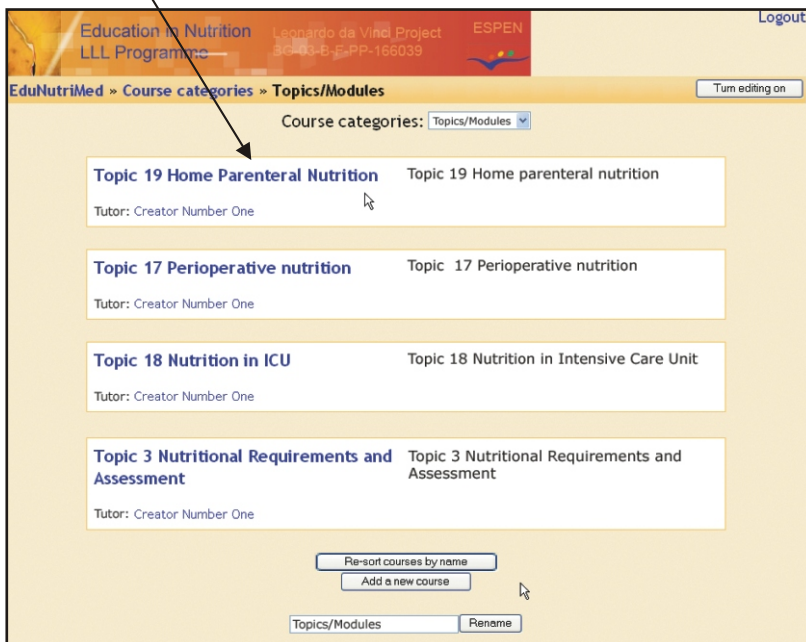
3. This will open the **Topic Activities Screen** for the selected Topic.

4 Organising the Topic/Module Screen

4.1 Basic screen elements

For successful tutoring you have to be familiar with basic screen elements.

If this is the first time you are entering a new module, created by the module author or by you, most of it will be blank.

Module templates have **Block** areas on the left and the right sides, with **course activities** being added in the middle of the screen.

The **Turn editing on** button reveals the Module's features for adding content and arranging side blocks in your course. This button is for course creators only

Start by clicking the **Turn editing on** button. This action will reveal:

> The **Blocks** dropdown menu for adding, removing and moving side blocks;
> Activity/Resource **editing symbols;**
> **Add a resource** and **Add an activity** lists.

The Navigation bar
This is used to return to the Home Page and to go to another Topic/Module

Side blocks

4.2 Adding Side Blocks

Select the type of Block you want to add from the **Blocks** dropdown menu. This drop-down menu will list all available Blocks. The selected Block will be added to the side blocks. You can add, remove and move around **Side blocks** on the module homepage according to your convenience and the as required by structure of the class that you are conducting. Blocks can be added for your class at any time. This menu can be used if you delete a block and wish to add it back, or if you wish to add blocks not shown by default.

Blocks can be added for your class at any time, by selecting from this list.
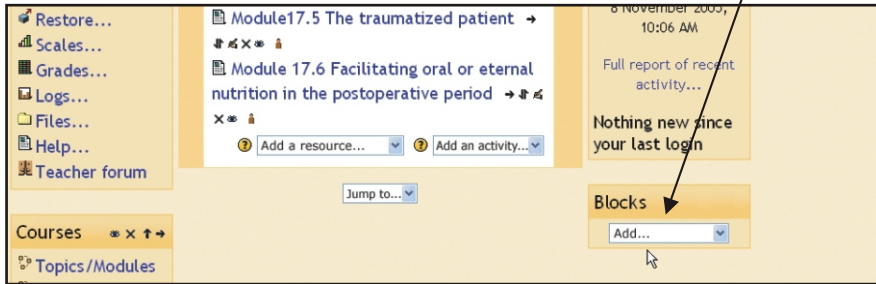

4.3 Editing symbols

For successful tutoring you have to get acquainted with editing symbols on the Topic/Module Screen.
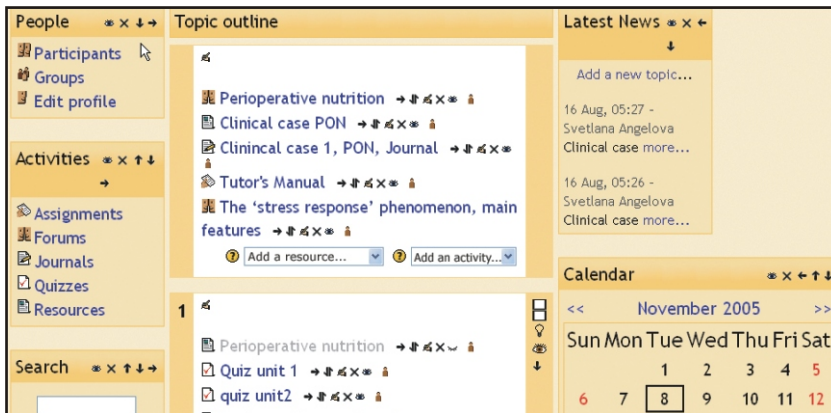
Each time you add a block, activity, or resource to your course, a series of editing symbols will appear alongside the link:

➔ Indents activity (left-facing arrow appears to un-indent)

⇕ Moves activity up or down in relation to other activities (in topic/weekly areas).
If you click on a right arrow, the block will move all the way across the screen to the right-hand side of the screen.
If you click on a left arrow, the block will move to the left-hand side of the class screen. These arrows move blocks around the screen, and this can be repeated as many times as you wish.

✏ Allows you to edit the activities properties.

X Deletes activity; if you click this symbol, the block will be deleted from your class page. If you delete a block and want to show it again later, add it from the menu in the **Blocks** block, which is located at the bottom right of the page.

👁 Hide activity from participant/learners (or shows the item if it is already hidden). If you click on the eye when it is opened, it will shut. When the eye is shut, you can see the block (in this example, the calendar), but the participants/learners in the class cannot see the block. If the eye is shut and you click on it, it will open, and the block will be visible to the participants/learners again.

🪣 Displays **Group** setting status of activity (Groups discussed in Learner Management).

4.4 Adding Activities/Resources
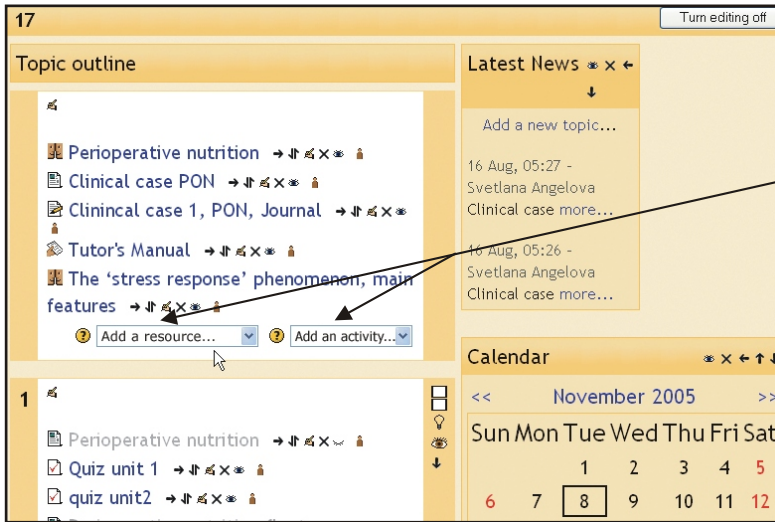
1. Click the **Turn editing on** button.

2. This action will reveal features for adding **activities** and **resources** in the content area of the Module.

3. From these dropdown menus you can select the activity or resource you want to make available to your class.

4. When you add a new activity or resource to your course such as a Forum, Journal, or Assignment, a link to that activity/resource will appear in the Activities block.
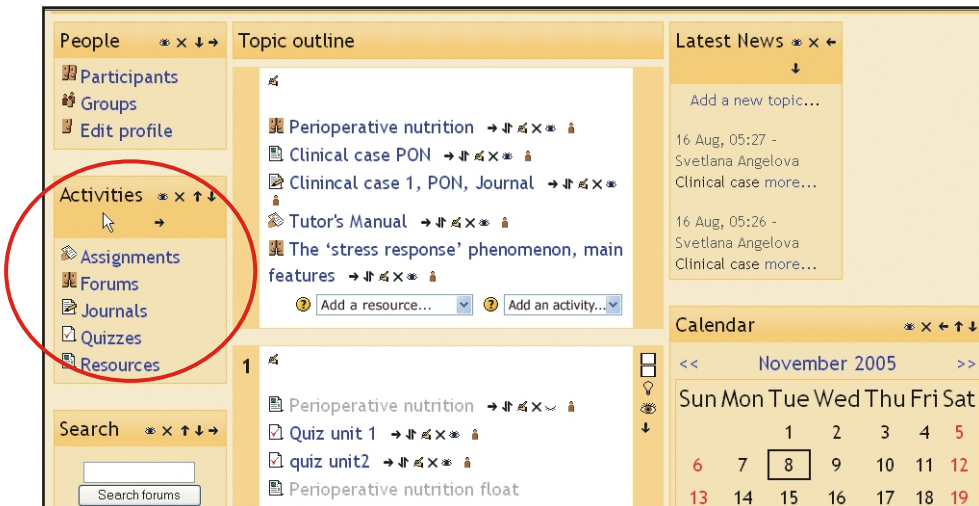
5. Thus this block will contain a list of all activities that are created throughout the course for that module. The block provides the participants/learners quick access to a specific learning activity, tutor feedback or grade.

Tutors can also access Learner Management features from this section.

5. Side Blocks

5.1 People

This block has three selections:

Participants (provides you a list of participants in the course);

Groups (allows you to organize your learners in groups to facilitate a training process);

Edit profile (allows users to add personal information to their profiles).

5.1.1 Participants

If you click on **Participants** you will see a screen with short profiles of all the learners enrolled in your class as well as information about other tutor(s) responsible for that module.

Click on the **Activity** link (on the right side) to see what was done by the participant in the module.

To see all the information about a certain person of your class, click on **Full profile.**

5.1.2 Groups

The option **Groups** allows you to organize the participants/learners in your class into groups and thus to facilitate the training process. When you click on **Groups**, you will go to the screen Groups.

1. To modify your groups, click on **Turn editing on**.
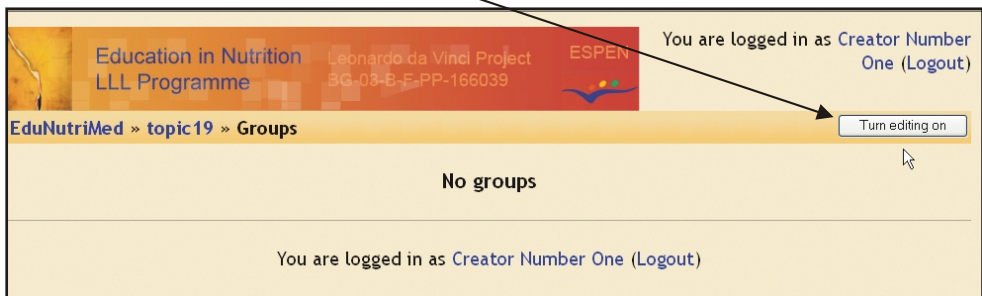
2. You will see a screen with 3 columns:

People not in a group, **Groups**, **Members of selected group**

3. If your class has no participants/learners in it yet, you will see only your name.

If you have participants in your class, but they are not distributed into groups, all of them will be listed in the column **People not in a group**. e.g. for topic 19, there are five participants and no groups.
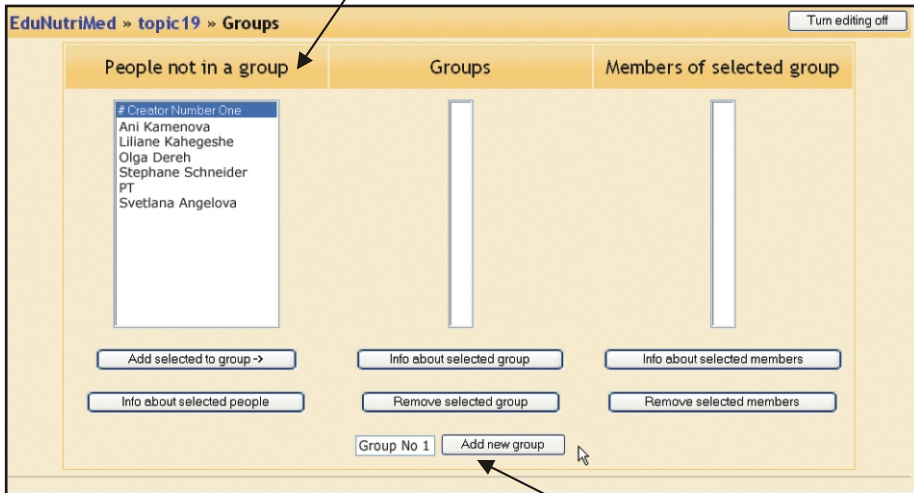
4. To add a group, type the name of the group in the box next to **Add new group**, and then click on **Add new group**. The name of the group will then appear in the second column 'Groups'. In this example, you have added a group called Group 1.

5. Participants can now be added to the group. To add a participant, click on the participant's name and click on **Add selected to group.**

6. To add several participants to a group at the same time, hold down the Shift key on your keyboard while clicking on each name.

7. To remove Participants from a group, select them from the third column and click on **Remove selected members.**

8. To Remove a Group, select the group from the second column and click on **Remove selected Group.**

9. Click the **Turn editing off** button, to view the newly created group.

10. Click on **Edit group profile.**
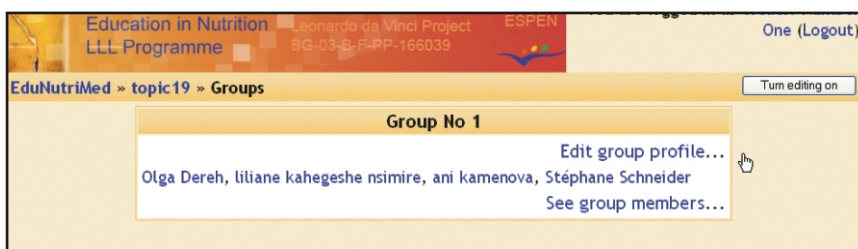
11. In the blank field you can write the information about your group.
Click on the button **Save changes** to complete the formation of your virtual group.
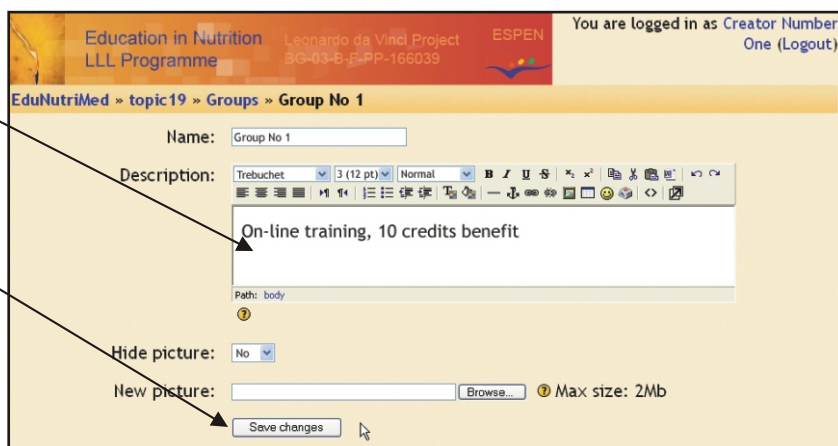
12. If you want to work on another module, you have to go back to your Topic/Module activities screen then click on the Topic name in the upper left.
The next option in block People after **Participants** is **Groups**.

5.1.3 Edit Profile

To find **Edit Profile** go back to the Topic activities page, the **Edit Profile** link is in the block People. It allows you to change the information about your students and yourself. Further information about this can be found in the Guidebook for users - Learner manual (Chapter 3).

5.2 Administration

On the left-hand side of the Topic/Module screen are the administrative tools for your class:

Turn editing on/off allows you to make changes in your class. It reveals the Module's features for adding content and arranging side blocks in your course.

Settings allows you to edit the settings of your class.

Tutors lists all the administrators/tutors for the course
(typically just you, but could be more than one if the class were team-taught).

Participants lists all of the participants/learners in the class. You can manually enroll or un-enroll a participant/learner from here.

Backup allows your class data to be backed up.

Restore allows you to restore old class data (provided it was previously backed up).

Scales allows you to define special scales for evaluation.
These are made up of word evaluations (i.e., Excellent, Good, Average, etc.).

Grades lists the grades of the tests and quiz of each enrolled participant/learner.

Logs shows you all the activity in your class over a selected period of time.

Files allows you to upload files to your "classroom," or to view any files that are already there.

Help brings up the Manual for working with Moodle - the system used for creating courses.

Teacher forum is a discussion board for tutors only.

5.2.1 Scales

1. For assessment of the progress of your participants you can use various scales. Click on Scales from the Block Administration on the Module activities page. This screen allows you to create your Custom Scale.

2. You can use an epistolary evaluation scale (like "fair," "excellent," etc).

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3. From this screen you can add a new scale by clicking on **Add a new scale**. This will open the screen for **Editing Scales**:

4. **Name** - You have to create a name for the scale. In this example, It is called "Scale No 1."

5. **Scale** - In this field you have to write your scale words. You can have as many as you like, but they need to be separated by commas, and they should be from the lowest level (like "Poor") to the highest level (like "Excellent").

6. **Description** - This is an optional field. You have to type your comments here.

7. On completion click on **Save Changes.**

5.3 Calendar

The calendar shows events that are happening in your classroom. Events are added to the calendar, and can be for individual users, for your groups, or for your courses. If you add deadlines to assignments, forums, quiz, etc, they will also be shown on the calendar.

There are four categories of events.

> **User events** are private: nobody else can see your user events (a personal date book).
> **Group events** can only be seen by the members of the group, who you have chosen

in the pull-down menu.
Course events can be seen by everyone enrolled in your class.
Global events are set by the site administrators.
Optional Event is any event you want to show on the calendar.
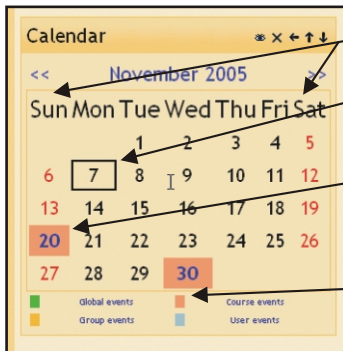
1. You can view previous or future months by clicking on the left or right arrows next to the current month's name.

2. The current date is always outlined in black (November 7th in this example).

3. All events are highlighted in specific colours depending on the type of event. The colour key is shown below the calendar.

4. You can hide or show specific categories of events by clicking on the colour key. This can make the calendar easier to read (especially if there are many events on the calendar).

5. For example, to hide the Group events dates, click on Group events at the bottom of the calendar. This would remove the colour highlight from all the group events in the calendar. To show the events again, click on the Group event link at the bottom of the calendar again.

6. Hiding/showing events changes only your account hiding group information does not hide it for every member of the group, but only for you. Also, hiding a category of events is only temporary, you will see all the events next time you login.

To see more details about a specific event, you have to click on the highlighted date.
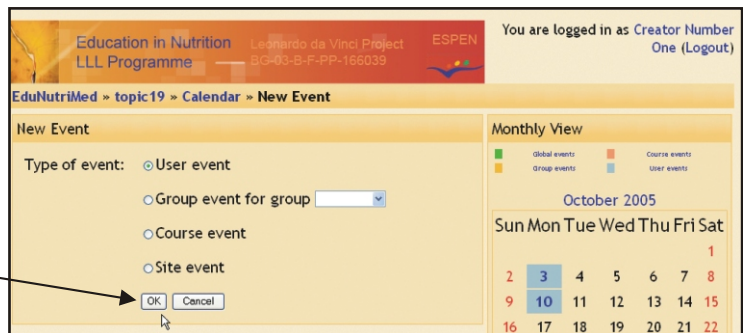
5.4 Upcoming events
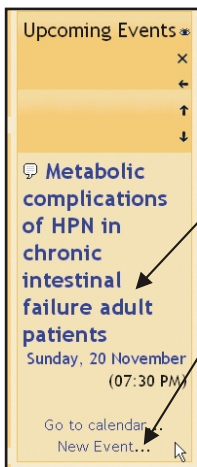
1. This block lists the upcoming events.

2. Click on a listed event to view further details about it.

3. To add an event, you have to click on **New Event** at the bottom of this block.

4. Select the type of event you want to add and click on **OK.** This will take you to the **New event** screen:

5. | Name | - Write the name of the new event in the blank field next to | Name |; it should be short.

6. | Description | - describe the event in details in the blank field.

7. | Date | - set the date and time of the event. The default is today's date.

8. | Duration | - set how long the event lasts.

9. | Repeats | - this field sets if the event repeats weekly or not.

10. After you fill in the information, click on **Save changes**.

11. After that you will go to a detailed screen of the event you just have developed.

12. You may edit the entry by clicking on the **symbol edit** (hand holding the pencil).

You may delete the entry by clicking on the **symbol delete** (X) on the right-hand side.

13. Notice, the calendar on the right side block will be immediately updated with all newly developed events, In this example you can see new highlights in a light-blue **(user event).**

6 Activities/Resources

6.1 Assignment

Assignment is a specific type of activity that allows you to develop the tasks for learners: topics for individual work, essays, reports etc. Assignment is a task that requires individual work of the learner on a topic, proposed by tutor: it could be a word file or Power point presentation with the information developed by the learner.

After you propose an assignment, the learners will find it on Module activity page. They are supposed to submit their report on the assignment electronically; they can upload a file of any type (Word, Power Point, etc.)

6.1.1 Adding an Assignment

1. To add an assignment for your learners, click on **Assignment** under the [Add an activity] menu on the Module Activity page.
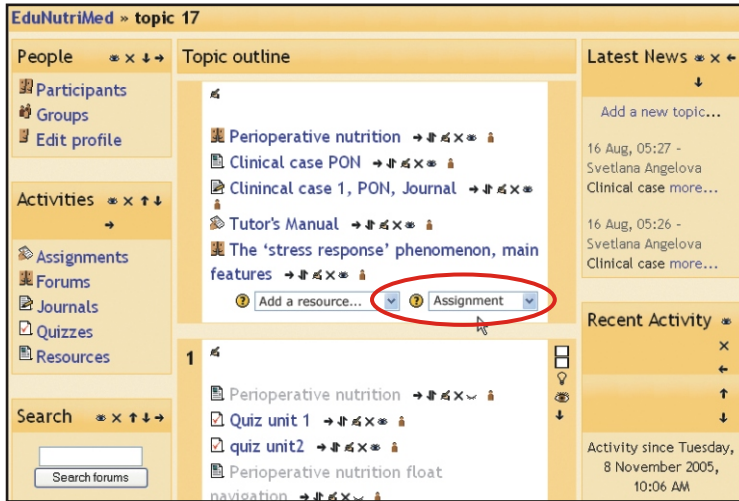
2. You will go to the '**Adding a new Assignment**' screen:

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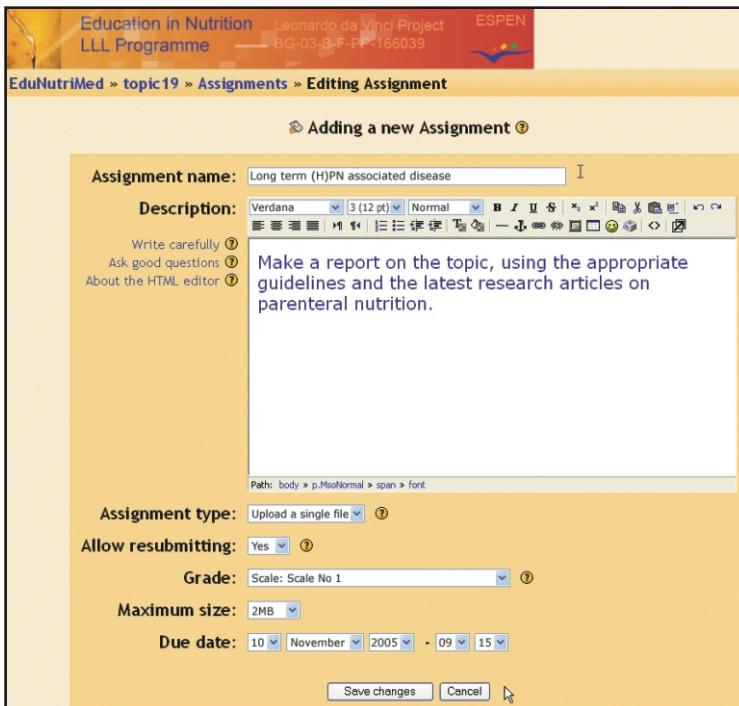
3. The Adding a new Assignment screen will have the following fields:

4. Assignment name You have to fill a title of the assignment in the blank field.

5. Description Then you have to provide a description of the assignment into window. It has full formatting access from the toolbar (bold, underline, images, etc.).

6. Assignment type field gives you the option allowing participants/learners to do the assignment offline (paper copies), or to upload a single file (they send you the file electronically).

7. Allow resubmitting allows students to resubmit the assignment, if this field is set to **Yes.**

8. Grade sets the grades as either a number (from 1-100) or as a custom epistolary scale set up in the "Scales" section (see the above section).

9. Maximum size limits the total size of the file that is uploaded if the assignment is to be submitted electronically. It is recommended to set it to the maximum size just to be on the safe side. Note that 2 Mb is plenty for most assignments, but that PowerPoint presentations can exceed this size.
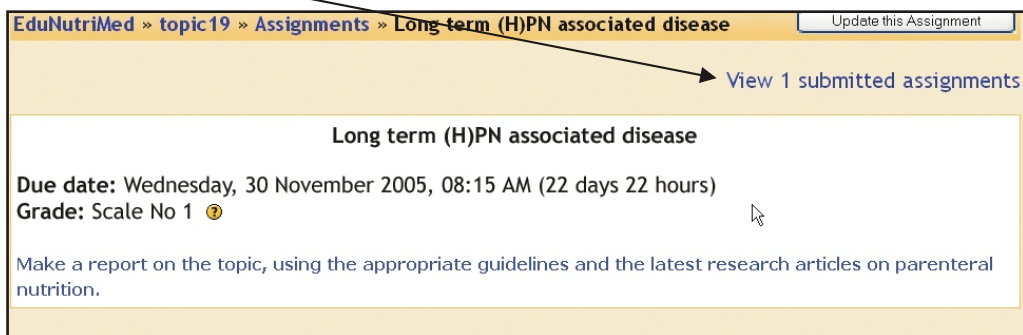
10. Due date indicates the assignment dead line. This date will be marked in the Calendar and assignment submissions will automatically be inactivated on this date.

11. Click **Save changes** to finish.

Students from your group will see the Assignment in the **Topic activity page** and in the Calendar.

### 6.1.2 Evaluating submitted Assignments

1. If you click on the assignment's name in Topic activity page, it will provide you a description of the assignment, as well as a link to any submitted/uploaded assignments. Notice that as a teacher, you have the option to view the submitted assignments. Click on the **View submitted assignment.**

2. You will go to the **'Submissions'** screen which has a list of your students/learners and contains links to the files submitted by each of them.

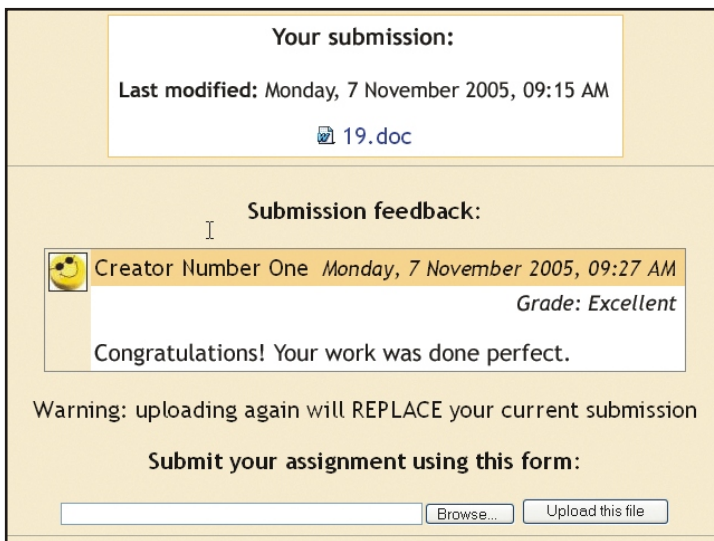3. Click on the name of the file, open it, check and evaluate it.
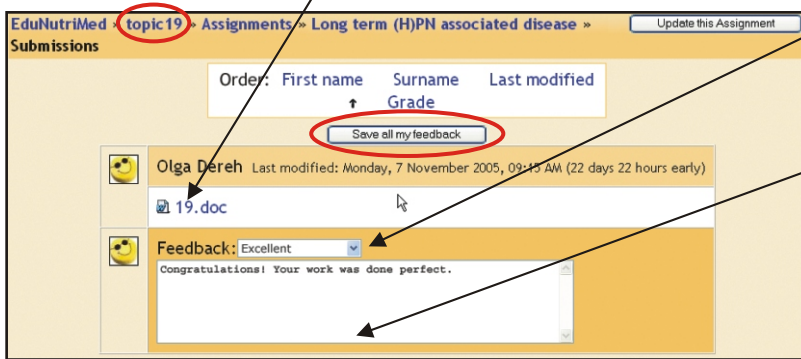
4. Choose your evaluation mark from Feedback menu.

5. Write your opinion in the blank field.

6. Submit your evaluation by clicking on **Save all my Feedback**.

7. To go back to the Module's activities screen, click on the Module name in the upper left. Your learners will be provided a link to the evaluation via e-mail.
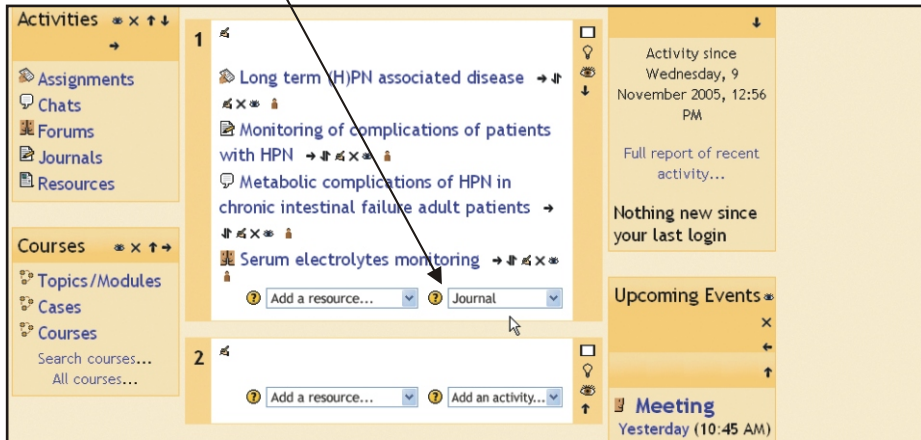

6.2 Journal

This option adds an online a Journal for the learner. The Journal can be seen by the learner and the teacher only. You can use this activity for assigning a task with short descriptions, questions and answers, so that they could be easily filled in the Journal fields. For example a Journal task could be: solve a Clinical Case, answer the following questions, etc. This option differs from the **Assignment** activity, where the learner is supposed to develop a larger piece of information: report, essay, research.

The journal can be edited by the learner after your feedback. You may also assign as many journals as you wish to see how each learner's thought process and skills improve.

6.2.1 Adding a Journal

1. To add a journal, select **Journal** from the Add an activity menu on the Topic activities page.

2. You will go to the **Journal editing page:**

3. Give the journal a name.

4. In the blank field ask your learner a question or describe the assigned task.

5. Set the grading scale .
No grade; custom scale (set up in "Scales" from the block Administration); or a number that represents the maximum grade (from 1-100).

6. The last field 'Days available' lets you select how long the journal will be available (from one day to Always open).

7. When you have finished with editing the journal, click on **Save changes**.

6.2.2 Evaluating a Journal

1. To evaluate the response of your student go to **Module activity screen**, open a Journal page by clicking on **Journal** from Activities menu.

2. You will go to the 'Journals' screen where the Journal task created by you will be displayed.

3. Click on **View journal entries** to open the 'Entries' screen.

4. The 'Entries' screen will display the comments of your learner regarding the journal task assigned to him/her. You have to evaluate the learner's report in the field **feedback** and to write your comments in the blank field - learner Journal profile.

5. To finalize click **Save all my feedback.**

6.3 Chat

The Option Chat takes you to a chat room. It is used for real-time discussions. Chatting is a very efficient way to discuss things in real-time.

1. Click on the **Turn editing on** button on the Module page.

2. Select **Chat** from the "Add an activity" drop down list. You will go to the 'Add a new Chat' screen.
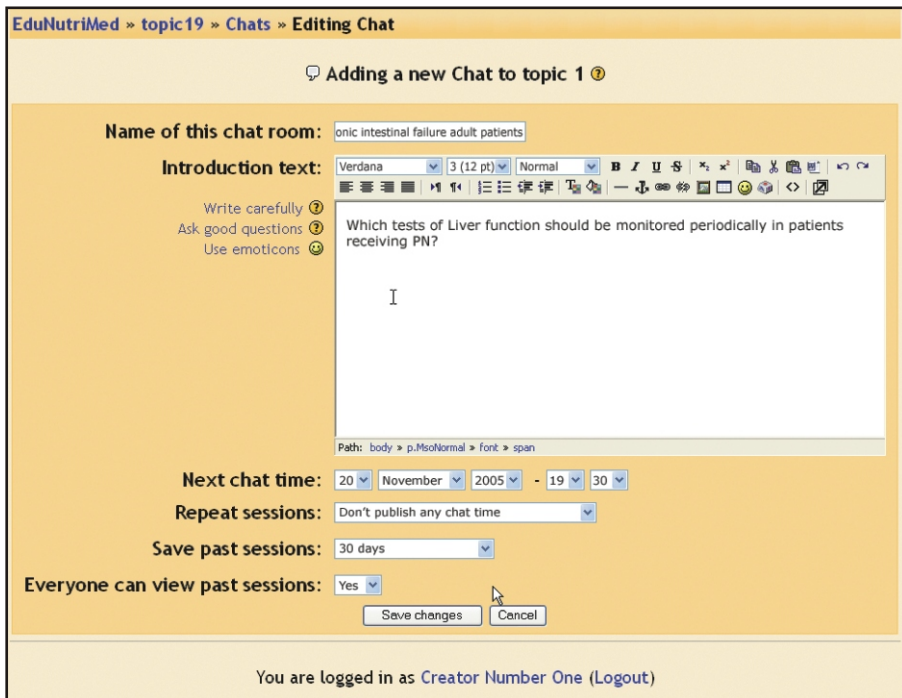
3. Name of this chat room - Write the topic of the chat session in this field.

4. Introduction text - Write a description of the purpose of the chat session here. It will appear on the chat room's introductory screen. This text supports formatting (bold, underline, etc.).

5. | Next chat time | - This is to inform learners when to enter the chat room. Learners may enter the chat room before the scheduled time, but this helps to organize the start of a chat session.

6. | Repeat sessions | - This sets whether there will be any repeat sessions. You can choose between a one-time chat event, a daily event, or a weekly event.

7. | Save past sessions | - Here you may select how long you want the chat session to remain archived (from two days to "never delete").
Please remember that a session will not be archived, unless there is an interaction between two (or more) users within a five-minute period.

8. | Everyone can view past sessions | - Determines whether students can see past chat sessions. The tutor can always see past (archived) sessions regardless of this setting.

9. After you have finished the Chat options, click on **Save changes**.
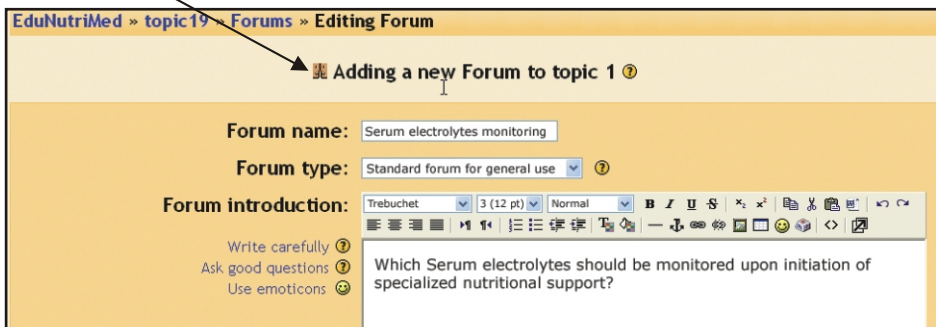
6.4 Forum

This is basically an online bulletin board. You may create a forum to discuss various topics for your class.

1. To add a Forum, select **Forum** from the | Add an activity | menu.
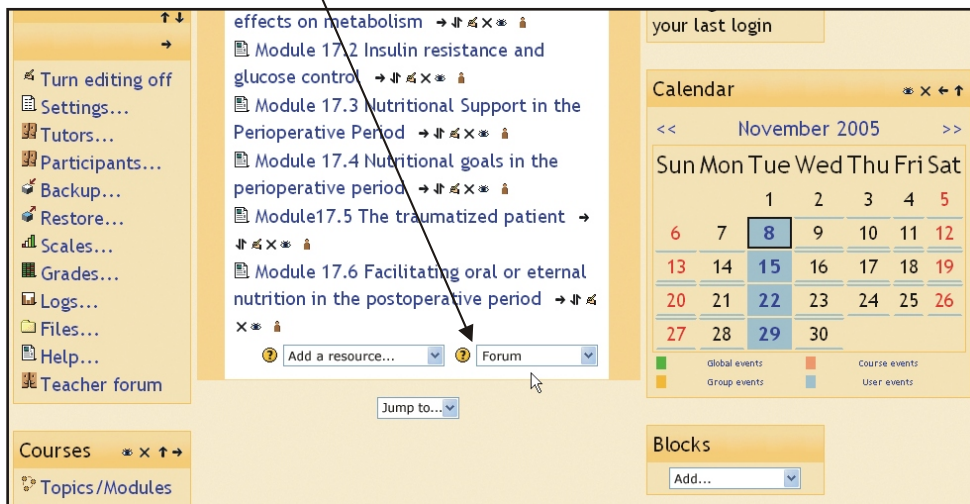
You will go to the **Adding a new Forum** page:

2. Forum name - Write the title of the topic to be discussed in the forum.

3. Forum type - offers three choices:

> **A single simple discussion** - allows the learners to reply, but they are not allowed to create new topics.
> **Each person posts one discussion** - allows each learner to start one new topic. This is useful if they all were doing different assignments, reports, etc.
> **Standard forum for general use** - allows the learners to start new topics any time they wish (unless restricted by you the tutor). The **Standard forum** is the most commonly used forum.

4. Can a participant post to this forum? - This menu has two options:

> Selecting **No discussions, but replies are allowed** restricts the learners from creating a new topic in the **Standard forum,** they can only post replies.
> By selecting **Discussions and replies are allowed** you can allow both discussions and replies, where learners can post anything they like: reply to an existing discussion, or to start a new discussion topic.

5. If the Force everyone to be subscribed? - option is set to **Yes**, every learner in your class will receive a copy of each post in the forum by email. If this setting is set to **No,** learners can still choose to be subscribed to the forum from their portal.

6. The next setting is Maximum attachment size, which allows you to limit the size of any attachments that students may want to upload.

7. Use ratings - If you want to rate posts check this box, if you don't want to rate posts then leave the "Use ratings" checkbox blank.

8. If the Use ratings checkbox is marked, other options become available.

9. Under the Users menu, you have the option of selecting who can rate posts. You can allow everyone to rate posts, or you can permit only administrators/tutors.

10. If you wish, you can limit the rating of posts to certain days or times. If you wish to do this, check the Restrict ratings to posts with dates in this range box. Set your "From" date and your "To" date, and the evaluator will only be able to assign ratings during those days.

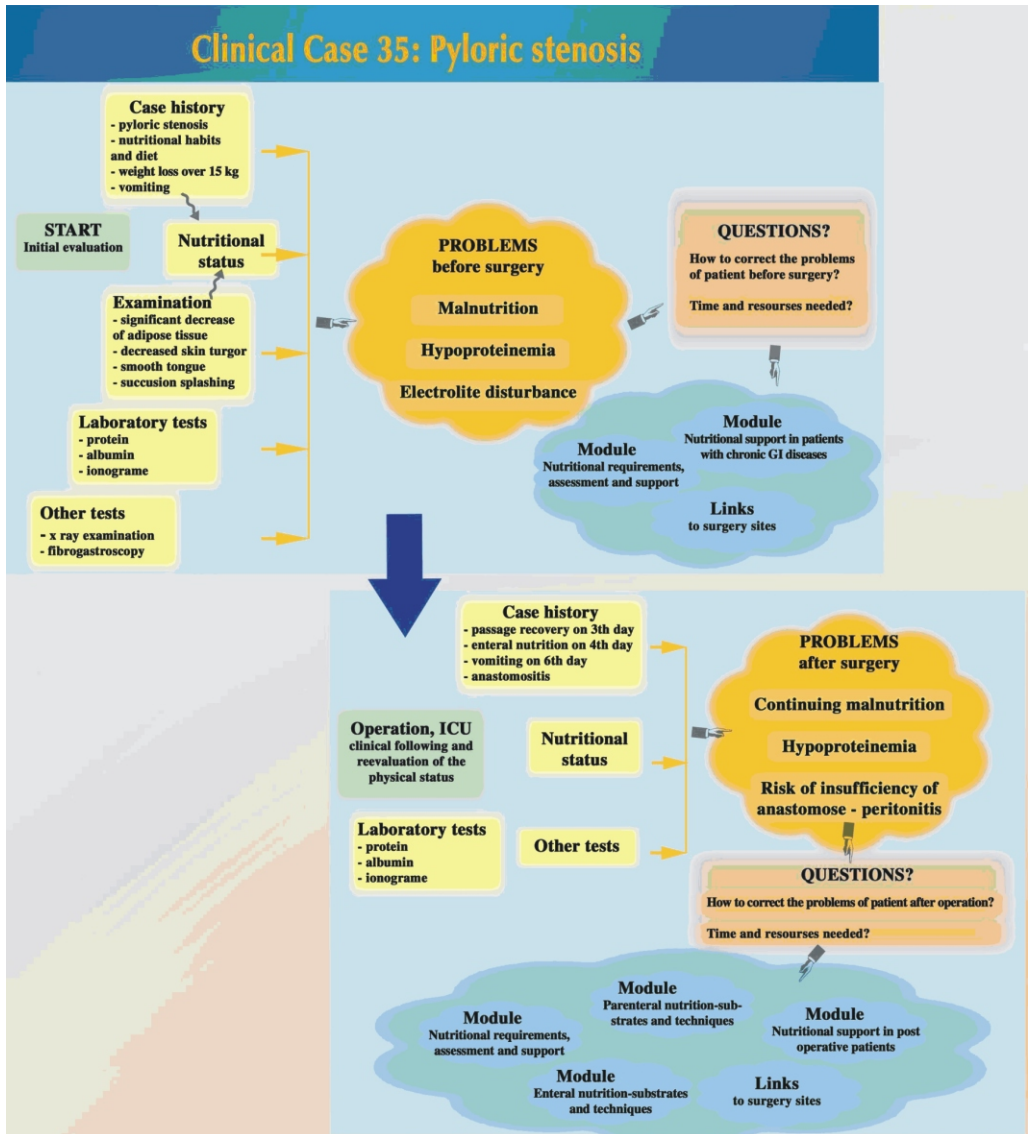11. After you have finished with Forum settings, click on **Save changes**.

If you have any further questions or difficulties while using this web-based educational system you may contact the system administrator at edunutrimed@gmail.com. The system administrator will provide you with the required assistance and support.

7. Module Content Development

MODULE Title Indication: Live or Web	
Director's name, **MD, PHD, Specialty** **Address: Country, City** **e-mail:**	
Author's name, **MD, PHD, Specialty** **Address: Country, City,** **e-mail**	
Content in points	
Key Messages	4-6 main key messages
Learning objectives	3-4 main learning objectives
Credits	will be filled by LLL director
Content - text	6-10 text pages (about 2500 words) Format: word/pdf file; Font: Times New Roman/ Verdana; Text font 12; Title: font 14/bold; Subtitle: font 12 bold
Content - Figures	Format: <gif> or <jpg>files, Size approximately 50 -100 Kb, numbered Fig. 1, plus short description The place of each figure should be indicated in the text
References and links	Available Power point presentations: 3-10 presentations, providing additional information on the topic Available Guidelines: European, ESPEN, USA etc….. References to the books, articles; web links

Test	20 questions for self-testing (true/false questions, all answers will be found in the text)
	30 questions for examination tests(true/false questions, all answers will be found in the text)
	file name
Clinical case	2 clinical cases per module (for self-training)
	3 clinical cases for examination
	file name
Time table and Venues	

Assessment and Criteria	Continuous Assessment	
	Final assessment	

Training Approach	Lecturing, Practicals, PBL sessions, Assignments for self training, Tutoring, Online consultations, Online seminars, Forum, Chat ...

Self-training*:	Topics for report	Criteria for evaluation should be provided
	Development of clinical case	
	Other	

Pass Standard (%) and any Special Requirements for Passing Module	

Clinical Case 35: Pyloric stenosis

Appendix 2
Clinical case example:

Gastrectomy Pyloric Stenosis

G. Y. G.   49 yrs old

I. Case History

1. Complaints
   - Upper abdominal distention after meal, more marked after consumption of liquids
   - Vomiting after meal, usually vomiting of undigested food particles
   - Complaints escalated over the preceding 10 days. Since 3 days vomiting occurs after consumption of liquids.

2. History of the disease.
   - Duodenal ulcer since 1979.
   - Weight loss - 20 кг for 3 months

3. Family history
   - Father and brother with duodenal ulcers
   - (operation of perforated pyloric ulcer)

4. Nutritional habits and diet
   - Meals 3-4 times daily, mainly in the evening.
   - Vomiting, mainly at night before sleeping and in the morning.
   - Defecation 2-3 times per week.
   - The patient prefers meat and spicy food.
   - Drinks alcohol (100-200g), usually in the evening.

II. Physical examination
   - Body height 178 см
   - Body weight 60 кг
   - BMI Body Mass Index = 60 : 178 2 =
   - Fat mass index F (%) - ?
   - Waist / hip ratio
   - Skin fold - 2 cm at abdominal wall.
   - Skin turgor - decreased
   - Tongue dry with coating
   - Succussion splash
   - Blood pressure 110/70
   - Nutritional status

III. Laboratory tests
   - transferin ⎫ malnutrition
   - prealbumin ⎭
   - urea
   - creatinine ⎫
   - glucose ⎭
   - cholesterol
   - triglycerides
   - insulin status
   - corticosteroids
   - albumin
   - amino acids

IV. Other tests

- 1. X ray examination Dilatatio ventriculi. Pyloric stenosis.
- 2. Ultrasonography Dilatatio ventriculi.
- 3. Fibrogastroscopy Pyloric stenosis

V. Diagnosis

Duodenal ulcer
Pyloric stenosis
Dilatatio ventriculi
Chronic Malnutrition
Cahexia
Hypoproteinemia
Electrolyte disbalance
Metabolic alkalosis.

VI. Differential Diagnosis

VII. Therapy

1. Surgical Stomach resection; Bilroth I Gastrectomy.
   Severe postoperative anastomositis. Jejunostoma nutritiva.
2. X ray therapy. Corticosteroid and x ray therapy for anastomositis
3. Jejunostoma nutritiva
4. Total parenteral nutrition, later combined with enteral (through jejunostom). Later only enteral nutrition with Suportan and Reconvan (Frasenius) x 1500 / day continuous infusion. Losses from nasogastric tube are put back into the jejunostomy. After 20 days anastomositis subsides. Oral nutrition. Jejunostomy tube removed on 30th day.

VIII. Nutrition

1. Nutritional diet
2. Nutritional supplements

IX. Assessment of quality of life

X. Patient Follow-up