

Credit Hour System for Obstetrics and Gynecology Residency Training Program 2020

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Abstract: “Credit hour is defined as a unit for measuring the students’ academic load and effort in the course or block during their Bachelor's, Master's or PhD program”. The most relevant academic credits for international students are: ECTS - European credits system and Semester credit hours (SCH) and quarter credits - American Credits. The main advantages of the credit hour system is that it enables students to carry their successes along with them until graduation. They also are encouraged throughout to keep up their academic performance, at least at a higher level than the minimum acceptable level.

Methods: A widespread relevant literature search using different search platforms was conducted to identify published works, monographs and workshop manuals that met the aim and objectives of the credit hour system worldwide.

Although many academic institutions are applying this system at the undergraduate level, but at the level of the residency training programs few academic bodied use this credit hour system. We presented representative and diverse information about credit hours system, and we gave our reflections on certain examples of academic institutions -including Gezira University in Sudan- that apply this system. So we took one example after another to compare and contrast each of them until we finalized with specific calculation.

Results: Total credit hours per year = 61 credit hours per year and the total credit hours over 4 years = $4 \times 61 = 244$ credit hours for residency training program in Obstetrics and Gynecology.

Conclusion: Implementation of credit hour system has many advantages with few drawbacks.

Keywords: Academic load, Academic performance, American Credit hours, European credits, Residency program, Semester credit hour.

1. INTRODUCTION

Curriculum is “a sophisticated blend of educational strategies, course content, learning outcomes, educational experiences, assessment and evaluation, the educational environment and the individual student’s learning style, resources, personal timetable and program of work” [1], [2]. In describing the key principles of the curriculum, we should consider the following: curriculum model (competency/outcome-based, community-based (CBE) problem-based (PBL) curriculum, block system, credit hour system etc.); integration if any; application of adult learning theory/principles, best evidence medical education (BEME), student-centered learning, variety of teaching/learning methods and assessment methods and tools with particular focus on workplace-based assessment external examiners/evaluators [1], [3], [4].

2. DEFENITION OF CREDIT HOUR SYSTEM

“Credit hour is defined as a unit for measuring the students’ academic load and effort in the course or block during their Bachelor's, Master's or PhD program” [1]. 1 credit hour = 50 minutes of lecture or recitation per week (along with two hours of out of class activities) or 2 or more hours of laboratory/clinical per week throughout the semester.

3. MAIN BODY

We have conducted a through literature review about the credit hour system worldwide, although many academic institutions are applying this system at the undergraduate level, but at the level of the residency training programs few academic bodied use this credit hour system. We will present representative and diverse information about credit hours system, and we will give our reflections on certain examples of academic institutions -including Gezira University in Sudan- that apply this system. So we will take one example after another to compare and contrast each of them until we finalize with specific calculation for residency training in Obstetrics and gynecology.

What is an academic credit system?

An academic credit system is a standard used by universities to measure and assess students' work and effort during their Bachelor's, Master's or PhD programme. It's important to understand how credits work and how credit points from one academic system are converted to credits from other credit systems [1-4]. The most relevant academic credits for international students are: ECTS - European credits system and Semester credit hours (SCH) and quarter credits - American Credits. For each course students will earn a number of credits. How? They will be assessed by their professor in terms of the amount of knowledge and skills they will achieve once they complete that course [4-7]. Mainly, each course should contain a certain number of credit points, determined by different criteria including student's workload, learning outcome and contact hours. Usually, the more work and effort a student is required to put into a course, the more credits that course worth. The suggested workload is an estimate for an average student [1], [7].

Academic credit systems in Australia

Australian universities don't have a unified credit system. Each university calculates the credits according to workload and number of study hours per each course. Credit transfer is available for both undergraduate and postgraduate study programmes and it is established and coordinated by the Australian Qualifications Framework (AQF).

Academic credit systems in the USA

In USA, students receive semester credit hours, which are based on the number of contact hours accumulated during one semester. Mainly, the student has to take around 5 courses each semester, where each course worth 3 semester credit hours, the equivalent of 45-48 contact hours. All these will add up to 30 credits per year, the required number to successfully complete a degree in the United States [6], [7].

Academic credit system in Europe

Aligned to the Bologna system, universities in the EU and EEA countries use the European Credit Transfer and Accumulation System (ECTS) as the main grading system in universities, as well as a way to keep track of credit transfers for students coming from these countries [5], [8]. So, how many credits for a Bachelor's or Master's degree in Europe? In ECTS, a full study year normally consists of 60 credits, so completing a Bachelor's degree would require earning 180 credits and a Master's degree would require 120 credit points.

Main benefits of academic credit systems [1], [5], [6], [7], [8].

- Student can earn academic credits for any type of study program (modules, courses, placements, dissertation work, etc.).
- Through academic credits, students get a consistent and transparent way of valuing their learning achievements.
- The awarded credits are recorded in a credit transcript that can lead to a qualification.
- They keep track of student progress and determine when he/she has met study requirements.
- They estimate the workload of a program.
- Facilitate the transfer to another university programme while keeping part or all previously earned credit points.
- Use the credit that student earned to study abroad – academic credit is used and recognized internationally.
- Academic credits act as proof of previous studies when looking for a job.

- Some universities use academic study credits to set degree costs.
- Credits support entry to a higher education programme.
- Enables students to carry their successes along with them until graduation through the agency of the Cumulative Great Point Average (CGPA).

How is academic credit distributed between courses?

Taking the example of the ECTS system used in European Union or European Free Alliance (EU/EEA) countries. The required amount of credits during a year is 60 credits that means 30 credits per semester. Usually, student has around four mandatory courses during a semester, with each course worth an average of 7.5 credits. However, there may be cases of classes with 9 credits, and others 4 or 5, but the total credits of each semester will always result in 30 credits [5], [6], [7], [8].

What is the student`s work load?

Workload refers to the specific amount of time it takes for an average student to reach the desired learning outcome. The workload includes most academic activities such as lectures, seminars, individual study, exams, etc. [1], [8].

What does learning outcome mean?

Learning outcome refers to the level of knowledge students are expected to gain and be able to apply after completing a process of learning. This may also include skills acquired that they can apply in future professions.

What is a contact hour?

A contact hour usually equals 50 minutes, and refers to a lecture or a lab time, so basically a teaching class. This may, however, vary between different Credit systems.

Examples

We will start the discussion from Sudan, taking University of Gezira as an example. The University of Gezira has the credit of introducing the credit hour (course unit/semester) system in Sudan.

Unlike the yearly system where 'terms' are used for the divisions/portions of the academic year (e.g. three terms per year, first, second and third term), the academic year of the semester system is usually divided into two semesters with a possibility of having a summer semester the same year with a shorter duration. For example in Gezira, they use 6 weeks each summer for the Field Training and Research in Rural Developmental Programs (FTRRD) Block as mentioned earlier [1]. The course unit system capitalizes on the credit hour as a unit for measuring the student academic load in the course or block [1], [6]. One credit hour means a load of one direct-contact hour (lecture) with the teacher, or two hours of tutorials, clinical/field or lab work, study/home assignments, etc. per week extending for a period of a semester of the normal duration of 15 weeks [1]. Some schools have semesters of up to 18 weeks and, instead of two hours; some require the equivalent of three hours of activities other than lectures for one credit hour. The credit hour therefore is the unit measuring the course work of the student and it indicates the weight, duration and teaching/learning methods of course/module/block [1], [6], [7]. In addition to the regular educational activities, the institution may assign a certain number of credit hours for each of the other activities such as electives, student research projects, community engagement and other required extracurricular activities [1].

The only debate on this system is that it gives more weight to the lecture (teacher-centered approach) rather than to other more innovative educational methods (student-centered approach). By comparing Gezira University system and Orotta College of Medicine & Health Sciences (OCMHS): the credit hour system - in OCMHS- they give more value and time for more interactive teaching methods like morning meetings, seminars, case presentations, clinical and teaching rounds approximately on daily basis, and this will be reflected on the number of credit hours allocated for these activities. Regarding the lectures: they give them one lecture per month for ultrasound teaching, biostatistics and any update in Obstetrics and Gynecology- to move for more learner centered approach away from teacher centered paradigm.

The second example is the from the USA, this is the proposal to Establish a Credit-Hour Equivalency Policy for the Doctor of Medicine (MD) Degree Program Offered by the Dell Medical School (DMS) [6]. This proposal is very

important because it was designed for MD degree. DMS will indirectly employ the credit hour as the measure of educational credit a student may receive for reporting or other purposes when necessary. Distance education and hybrid courses will use the same credit hour requirements as face-to-face courses. The Doctor of Medicine (MD) degree offered by DMS does not use the credit hour as a measure for which students receive credit or progress. Instead, the MD degree requires 180 full-time weeks of credit over approximately 4 years [6]. The 180 full-time weeks of credit are equivalent to 175-195 credit hours using the following conversion methodology: MS 1 (Year 1) courses contact hours include but are not limited to lectures, laboratory, small group discussions, case-based learning activities and problem solving. Average contact time per week is approximately 15-18 hours. Additionally students complete 2 to 3 hours out-of-class time per hour of contact instruction. Therefore, one week of full-time instruction in the DMS curriculum is equivalent to one credit hour [6]. In the clinical experiences of MS2 (Year 2), MS3 (Year 3), and MS 4 (Year 4), actual contact time is greater. Because the educational approach is fundamentally different, with less emphasis on formal didactic instruction and study and greater emphasis on experiential learning, the number of contact hours needed to meet the equation that one full-time week equals one (1) credit hour is increased to between 40-70 contact hours per week. The credit hour equivalents of clinical rotations and electives is one hour per week. Students will also complete longitudinal components of the curriculum, which run in tandem with the MS1 – MS4 courses and clerkships. Credit hours are assigned to these courses based on contact hours and are comparable to other courses where the average contact time per week is approximately 15 – 18 hours for one (1) credit hour in non-clinical courses and 40-70 contact hours for one (1) credit hour for clinical courses.

In sum, the credit-hour equivalency for the MD degree program is as follows:

Year 1 = 48 full-time weeks (equivalent to 52 credit hours).

Year 2 = 49 full-time weeks (equivalent to 52 credit hours).

Year 3 = 48 full-time weeks (equivalent to 38-46 credit hours).

Year 4 = 35 full-time weeks (equivalent to 37-45 credit hours).

Total Years 1 through 4 = 179-195 credit hours [6].

The third example is from South Carolina about Calculating Credit Hours, in Medical University of South Carolina (MUSC), they provide excellent and clear calculation of credit hours for both theoretical and practical activities that meet the consensus of different universities throughout the world [7]. The following guide for calculating credit hours was approved by the Education Advisory Council. These guidelines represent a minimum standard for content hours per credit hour earned. In addition, the student should expect to spend at least twice the number of content hours engaged in additional educational activities specifically related to the course regardless of the delivery mode (i.e., traditional, blended, or on-line format). Courses that use more than one type of instruction, calculate credit based on the instruction type most used in the course [7].

The table below is a very informative, it calculates the credit hours for different academic activities in a simplified way [7].

Table1: Calculation of the credit hours system adopted from (MUSC) [7].

Type of Course	Credit/Content Hours Over the Course of the Semester
Lecture	1 credit hour for 15 content hours
Laboratory	1 credit hour for 30 content hours
Seminar	1 credit hour for 15 content hours
Conferences	1 credit hour for 22.5 content hours
Small Group Instruction	1 credit hour for 15 content hours
Independent Study	1 credit hour for 15 content hours
Clinical	1 credit hour for 30 contact hours
Practicum/Preceptorship	1 credit hour for 30 contact hours
Clerkship	1 credit hour for 40 contact hours

4. PROPOSAL OF CREDIT HOUR SYSTEM FOR RESIDENCY PROGRAM IN OBSTETRICS AND GYNECOLOGY in OCMHS

1. Morning meetings/case presentations: from 8-9 AM daily from Saturday to Friday: $1 \times 6 \times 48 \text{ weeks} / 30 = 9.6 (\approx 10)$ credit hours per year.

NB: Residents work for 48 weeks out of 52 weeks as 4 weeks of the year will be an annual leave for each resident.

NB: The morning meeting hours are divided by 30, as 2 contact hours weekly for 15 weeks are considered as one credit hour.

2. Clinical activities: (delivery room, Obstetrics and Gynecological theatres, Outpatient department, ward rounds) from 9AM – 1 PM daily from Saturday to Friday: $4 \times 6 \times 48 / 45 = 25.6 (\approx 26)$ credit hours per year.

We divided by 45 as we considered that 3 contact hours in clinical activities weekly for 15 weeks as one credit hour.

3. Clinical/Teaching rounds 2 per week: $2 \times 48 / 30 = 3.2 (\approx 3)$ credit hours per year.
4. Seminars: 2 per week: $2 \times 48 / 30 = 3.2 (\approx 3)$ credit hours per year.
5. Duties: once per week (16 hours weekly) from 4 PM to 8 AM: $16 \times 48 / 45 = 17$ credit hours per year.
6. Clinical pathological conference: once per month: $11 / 45 = 0.24$ credit hours per year.
7. Journal club: once per month: $11 / 45 = 0.24$ credit hours per year.
8. Self-directed learning: 2 per month: $2 \times 11 / 30 = 0.7 (\approx 1)$ credit hours/year.
9. Lecture: 2hours once per month (for Ultrasound teaching, Biostatistics and any update in Obstetrics and Gynecology): $2 \times 11 / 15 = 1.5 (\approx 2)$ credit hours/year.

NB: one hour lecture/week for 15 weeks = 1 credit hour, so we divided by 15.

10. Mortality meeting every 3months: $4 / 45 = 0.1$ credit hours/year.

Total credit hours per year = 61 credit hours per year.

Total credit hours over 4 years = $4 \times 62 = 248$ credit hours.

NB: The load can be reduced in year 3 and 4 and hence the credit hours to allow more time for the residents to complete their deficiencies in knowledge and skills in addition to finalize their thesis.

NB. Contact hours to meet the required credit hours in year 2-4 will increase because the residents will move from didactic learning to more experiential learning, so they need more contact hours.

11. Thesis: The weight of thesis will be determined by the inter-disciplinary consensus.

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