

EVALUATION AND ACCREDITATION DOCUMENTS

M.Sc. Biochemistry

Department of Biochemistry

Ahmadu Bello University

Zaria, Nigeria

February 2024

Rapport publié le 15/04/2024

CONTENTS

Evaluation report	pages 1 to 12
Comments of the institution	pages 13 to 14
Accreditation decision	following pages



International evaluation and accreditation

EVALUATION REPORT

M.Sc. Biochemistry

Department of Biochemistry

Ahmadu Bello University

Zaria, Nigeria

February 2024

The Ahmadu Bello University has mandated the Hcéres to perform the evaluation of its Biochemistry M.Sc. programme. The evaluation is based on the “External Evaluation Standards” of foreign study programmes, adopted by the Hcéres Board on January 31st, 2022. These standards are available on the Hcéres website (hceres.fr).

On behalf of the experts committee¹ :

Anne Varenne, President of the committee

In the name of Hcéres¹ :

Stéphane Le Bouler, Acting President

¹In accordance with articles R. 114-15 and R. 114-10 of the Research Code, evaluation reports are signed by the chairman of the experts committee and countersigned by the President of Hcéres.

CONTENTS

I. STUDY PROGRAMME IDENTITY SHEET	4
II. PRESENTATION OF THE STUDY PROGRAMME.....	5
1 – Presentation of the study programme	5
2 – Presentation of the programme's self-evaluation approach	5
III. COMPOSITION OF THE EXPERTS COMMITTEE	5
IV. VISIT DESCRIPTION	5
V. EVALUATION REPORT	7
1 – Training policy and characterisation	7
2 – Pedagogical organisation of the study programme.....	8
3 – Attractiveness, performance and relevance of the study programme	9
4 – Academic programme management and continuous improvement	9
VI. CONCLUSION.....	11
Strengths.....	11
Weaknesses	11
Recommendations	12
VII. COMMENTS OF THE INSTITUTION	13

I. STUDY PROGRAMME IDENTITY SHEET

- University: Ahmadu Bello University (ABU), Zaria, Nigeria
- Department concerned: Department of Biochemistry
- Title of the programme: M.Sc. Biochemistry
- Year of creation and context: 1973, to provide manpower in diagnosis, management, and prevention of neglected tropical diseases and to develop vaccines for the prevention of those diseases
- Site where the programme is taught (town and campus): Department of Biochemistry, Campus Samaru, Ahmadu Bello University (ABU), Zaria, Nigeria

PROGRAMME DIRECTOR

- Surname, first name: Sallau, Abdullahi Balarabe
- Profession and grade: Professor
- Main subjects taught: Physical Biochemistry, Bioengineering

METHODS AND RESULTS OF THE PREVIOUS ACCREDITATION(S)

- In 2017, the programme was evaluated by the National Universities Commission (NUC). The programme received its full accreditation by the NUC for 5 years, from March 2017 to March 2022.
- No previous international accreditation. However, two other programmes from this Centre of Excellence (M.Sc. and Ph.D. Biotechnology) were evaluated and accredited by Hcéres in 2019 for five years.

HUMAN AND MATERIAL RESOURCES DEDICATED TO THE PROGRAMME

– Human resources

Academic staff	Professors and Assistant Professors	Senior Lecturers	Lecturers	Assistant Lecturers	Graduate Assistants	Total
	11	11	12	8	2	44
Technical staff	Chief Technologists	Assistant Chief Technologist	Principal and Senior Technologists	Technologists	Assistant Technologists	Total
	2	1	2	6	2	13
Administrative staff	Department Secretary	Higher executive officer	Senior Library Officers	Senior Office Assistant	Others	Total
	1	1	2	1	5	10

- **Material resources:** students have access to desktops and laptops. Classrooms are equipped with interactive whiteboards and audiovisual recording facilities (lectures are automatically recorded). ACE NTDFB uses 2 lecture rooms, 2 conference rooms, 1 seminar room and 2 laboratories, with access to the University library. The programme uses the equipment of the Department of Biochemistry, which includes over 200 facilities, including 58 provided by the ACE NTDFB.

STUDENT POPULATION: EVOLUTION AND TYPOLOGY OVER THE LAST 4 YEARS

		2018/2019	2019/2020	2020/2021*	2021/2022	2022/2023*
Enrolment	Male	11	9	-	7	-
	Female	2	4	-	2	-
	<i>including foreigners</i>	0	0	-	0	-
	<i>including students with grants</i>	2	1	-	0	-
	Total	13	13	-	9	-
Graduates	Male	6	1	7	-	5
	Female	3	3	5	-	3
	<i>including foreigners</i>	0	0	0	-	0
	Total	9	4	12	-	8

*Due to the Covid-19 pandemic and industrial action embarked by the Academic staff of Nigerian universities, Ahmadu Bello University had to cancel two academic sessions (2020/2021 and 2022/2023), as such no admission within these specified periods. The next round of admission (2023/2024 session) is to commence in November 2023.

II. PRESENTATION OF THE STUDY PROGRAMME

1 – PRESENTATION OF THE STUDY PROGRAMME

The Centre for Neglected Tropical Diseases and Forensic Biotechnology (NTDFB) is an African Centre of Excellence hosted by Ahmadu Bello University in Zaria, Nigeria, implemented as part of the ACE Project supported by the World Bank in 2014. The Centre was established to drive research and innovations on novel standardized molecular diagnostic tools for the characterization of parasites in their natural habitats, develop and maintain pathogen samples and strain repositories and develop a vaccine development facility for innovative vaccination approaches. It analyses neglected tropical diseases as a challenge for the development of sub-Saharan Africa. Therefore, its objectives include providing manpower in diagnosis, management, and prevention of neglected tropical diseases and developing vaccines for the prevention of these diseases. The Centre stated mission is to bridge the gap between academics and industry by producing manpower with adequate theoretical and practical knowledge for the development of the community. Several programmes are hosted in the Centre, such as Biotechnology and Nutrition.

The M.Sc. Biochemistry programme was created in 1973 and has since been hosted by the Department of Biochemistry in which the Biotechnology programmes are domiciled. It aims to provide specialized training and in-depth knowledge of scientific, ethical and social considerations that inform the various fields of Biochemistry and to produce specialized skills needed in any biochemistry-related industries and institutions as well as prepare candidates for self-employment. All applicants must take an aptitude test and score 50% or above to be recommended for admission. The programme benefits from the equipment and facilities of the Department of Biochemistry, and the Faculty teaches in several programmes. Moreover, a large majority of the faculty members are dedicated to the Biochemistry postgraduate programmes.

2 – PRESENTATION OF THE PROGRAMME'S SELF-EVALUATION APPROACH

Although the University has an internal quality assurance committee, no information was given about the way the self-evaluation approach was conducted. The self-evaluation report was very succinct, with a lack of essential information. However, many additional documents were requested before and after the visit, and most of them have been received.

III. COMPOSITION OF THE EXPERTS COMMITTEE

- **Anne VARENNE**, Chair of the committee, Full professor, Chimie ParisTech PSL, Paris, France
- **Olivier BOUTIN**, Full professor, Aix-Marseille University, France
- **Olivier DONARD**, Research Director, CNRS, University of Pau, France
- **Julie FINKEL**, Ph.D. Student, University of Montpellier, France

Hcéres was represented by **Zakia MESTARI**, project manager, Europe and International Department.

IV. VISIT DESCRIPTION

- **Date of the visit:** the visit took place on Tuesday 29th August 2023.
- **Summary of the proceedings:** before the visit took place, the self-evaluation report and some appendices had been received by the experts. Two preparatory meetings between the Director of the Hcéres Europe and International Department, the Hcéres project manager and the committee were held in Paris (28th July) and online (25th August). Following these two meetings, complementary documents and information had been asked. The on-site visit took place during one day, according to a schedule agreed between the National Universities Commission, the ACE NTDFB and the

committee. During the visit, the experts asked for many more documents to get quantitative data. Most of these documents have been received. In the end, the experts had to make repeated requests to obtain the documents needed for the evaluation.

- **Organisation of the visit:** for safety reasons, the visit was organised in hybrid mode in Abuja and the committee was not able to visit the Centre in Zaria. Thanks to the National Universities Commission and the Centre cooperation, most of the audience travelled to Abuja for face-to-face interviews with the committee. For instance, all the students came to Abuja, allowing the interview to be very fluid. Five members of the Centre were attending a meeting at the University of Bremen, including the Centre Leader, Prof. Y.K.E. Ibrahim, and the programme director, Prof. A. B. Sallau; they were therefore unable to take part in the interviews.
- **Cooperation of study programme and institution to be accredited:** ACE NTDFB has been cooperative throughout the process. The self-evaluation report was sent according to the agreed schedule. Most of the questions asked were answered clearly and precisely. The committee is satisfied that the conclusion reached is based on available and relevant information. Moreover, the involvement of the National Universities Commission has been very helpful throughout the process.
- **People met:** the experts' committee was able to meet with 29 people from different panels:

	Session	Audience
8:00 – 9:30	Presentation of both programmes (M.Sc. and Ph.D.) and discussion	Deputy Centre Leader, deputy programmes directors and their teams
9:30 – 10:30	M.Sc. and Ph.D. academic staff	Representative panel of academics from both programmes
10:45 – 11:45	Quality assurance	Quality assurance representatives
11:45 – 12:45	Alumni	Representative panel of alumni
14:00 – 15:00	Socio-economic partners and employers	Representative panel of socio-economic partners and employers
15:00 – 16:30	M.Sc. and Ph.D. students	Representative panel of students from both programmes
16:30 – 17:30	Closing session	Deputy Centre Leader, deputy programmes directors and their teams

V. EVALUATION REPORT

1 – TRAINING POLICY AND CHARACTERISATION

The study programme is perfectly in line with the ambition and pedagogical orientations of the institution. A large part of the program is the same for all M.Sc. in Biochemistry in Nigeria, as it is proposed and elaborated by the National University Commission (NUC). Part of the programme is locally proposed by Ahmadu Bello University, for instance, teaching on enzymology, nutrition, and physical biochemistry. The programme is well positioned in the international training landscape as it has received the label "Africa Centres of Excellence" (ACE) from the World Bank, indicating the complementarity with other programmes in Africa. The M.Sc. is also well positioned in the national context, and its specificity detailed before allows welcoming students from other Nigerian universities. On a local scale, it is part of the Biochemistry Department (Faculty of Life Science) and very well recognised in the University, located in the Centre for Biotechnology Research and Training.

The programme is developed in a coherent and complementary way with other study programmes in the context of the Biochemistry Department, that propose complementary trainings in the field of Biotechnology and Nutrition. Some links are naturally proposed with the Ph.D. in Biotechnology, in the same department of the faculty. This department also provides programmes in the field of biology and chemistry, leading to a Bachelor of Science. The study programme monitors the different partnerships at the different geographical levels, providing the list of the agreements, the memorandum themselves and the different participations. Different aspects of multidisciplinary and interdisciplinarity are well identified in the study programme, with relationships between biochemistry processes, medicine, health issues and biochemical aspects such as enzymes, genes, and pathways as well as thermodynamics, energy, and statistics approaches. One elective course may be taken from other programmes in other Departments such as chemical engineering, chemistry or microbiology. Sustainable development issues are also proposed from the point of view of management and bioenergetics/thermodynamics.

International partnerships are developed, mainly with International Centre for Research and Development in Livestock in the sub-humid Zone (CIRDES), Bobo-Dioulasso, Burkina Faso; Kwame Nkrumah University of Science and Technology in Ghana; Bremen University in Germany; Centre for Science & Technology of the Non-Aligned and Other Developing Countries in India; and the University of Johannesburg in South Africa. For all these collaborations, signed agreements are provided with full details of actions for student mobility and research discussions. However, no evidence can be found that there are active exchanges following these agreements. Therefore, there is no effective incoming and outgoing student mobility. All students in the programme come from Nigeria (see table, p. 2). Considering international students' aspects, it appears that mobility was possible in the past. It must be underlined, as it has been explained during the visit, that both financial aspects and safety context have stopped any international exchange.

The position of the programme regarding the research community is clear and comprehensive. The programme is located at the Centre for Biotechnology and Research, as well as the five research units directly linked to the programme. It is also connected to doctoral trainings, and specifically to the Ph.D. in Biochemistry (same department). At national level, the programme, through the intermediate of distinguished professors, received funds from the Institutional Based Research and National Research Fund. The study programme includes deep research training through different courses during the first year: experimental techniques in biochemistry (2 credits), Information and communications technologies and research methodology (2 credits are dedicated to research integrity and ethics and to research-based learning with online library access), technical paper writing and grant application (1 credit). During the second year, all students assist to one course named Biochemistry practical teaching and demonstration (2 credits) and must propose two seminars (3 credits) during their six-month internship. A large part of students makes their internship in a public laboratory (for instance, considering three years from 2019 to 2022, 27 internships in laboratories out of 34 students, and 3 of them have received a grant from their supervisor). During their internship in the laboratory, two supervisors mentor them. Students must present their results through two seminars and a final dissertation. Professors and researchers from the disciplines involved in the study programme participate in the courses, mainly from biochemistry thematic, but also from pharmaceuticals or civil law.

The study programme considers socio-economic needs and involves socio-economic actors at the National University Commission (NUC) level when they elaborate the curricula of M.Sc. in Biochemistry. It has been explained during the visit that end-users (for instance product suppliers) are asked to participate in some programme elaboration. There is, however, no local involvement in this kind of partnership, and no dedicated agreements with institutions and companies. Even if these partners are not involved, it must be underlined that there is an extensive course dedicated to management and entrepreneurship. Moreover, it was raised during the visit that the Department does not have sufficient financial support to welcome foreign Faculty members in the M.Sc. Therefore, there are not so many effective links with the socio-economic world. This has been justified by the fact that, in the internal organisation of the programmes in the Biochemistry department, the programme

“Biotechnology” is more dedicated to subjects linked to the socio-economic world, and the programme “Biochemistry” to research concerns and applications. This separation can be understandable. However, a more important involvement of the socio-economic partners is expected as it can benefit the students.

In conclusion, the study programme is totally consistent with the institution's educational training strategy at the Ahmadu Bello University level as well as at the National Universities Commission (NUC) level and recognised by the World Bank as an Africa Centre of Excellence. It has a central and coherent position in the Biochemistry department of the University and among the other proposed programmes. The study programme addresses all required thematic and courses, including an interdisciplinary approach for the different scientific needs and for entrepreneurship. Moreover, the programme is effectively backed by research units and partially funded by research funds and bodies. Although there are some signed agreements with foreign universities, there is no international mobility. This is explained by the national situation (scarcity of funds, security). In addition, the socio-economic world is not sufficiently involved in training. This is justified by the research-oriented strategy of the programme, but ultimately the links are still too weak for an M.Sc. programme. The programme appears to be scientifically relevant, functional, and highly structured. Additional openings towards the international and socio-economic world would enable it to reach the best international standards.

2 – PEDAGOGICAL ORGANISATION OF THE STUDY PROGRAMME

The study programme's objectives, contents, teaching methods and learning outcomes are defined in the student handbook provided by the university to the students. The M.Sc. Biochemistry programme is organized in course units and is divided into core and elective courses. It shall run for a minimum of four semesters and a maximum of six semesters. Over the first year of the programme, students must take and pass all taught core courses (twenty-four credits units) and a minimum of six credit units of elective courses. Over the second year of the programme, students must be involved in biochemistry practical teaching and demonstration for undergraduates. They are also expected to carry out research in a specific area of Biochemistry for twelve to eighteen months and successfully defend their dissertation. They must make two important presentations to achieve the programme: first, on their proposed research work and second, on their research findings. The programme adopts a curriculum-based and skill-based approach, notably thanks to research internships but also to core courses like “Management and Entrepreneurship”, “ICT and research methodology” and “Technical paper writing and grant application”.

The structure of the programme enables the progressive specialisation of students and flexibility in their career paths by enabling students to take different elective courses including some from other programmes of other Departments: chemistry, chemical engineering, anatomy, microbiology, pharmacology. However, no bridges between programmes enable students to change study programmes. The programme does not propose students build an official portfolio including the skills the students should acquire during their M.Sc. training.

Besides practical and laboratory work, the programme does not diversify its teaching methods (collaborative tools, project-based teaching, inverted teaching, serious games, active lecture classes) and does not officially propose specific measures to promote student success as individual monitoring. However, students can easily communicate with the faculty members at any time, and each M.Sc. student gets at least two supervisors. The programme is based on various types of teaching environments in line with its objectives and teaching methods: laboratories, lectures, seminars, but also partial distance learning through different virtual teaching platforms (Zoom, Google Meet, Microsoft Teams, and Big Blue Button). Additionally, the students must take an “ICT and Research methodology” course which aims to train them in the use of information and communication technologies, notably for their use in research.

The official language of the country being English, the Nigerian students are native in this language and the programme is taught in English. Additionally, language support for foreign non-English-speaking students is provided. Safety issues happening in Nigeria limit the incoming mobility (no foreign M.Sc. students enrolled in the programme within the last four years).

The programme includes a core course “Management and Entrepreneurship” in the first semester and involves socio-economic actors (public and private) in Nigeria and abroad (for instance Cameroon and Ghana). It also includes a period of 12 to 18 months of work immersion for students through a research project. Over the last four years, 76.5% of the students involved in the programme did their internship in the public sector versus 23.5% in the private one. Each student has a minimum of two supervisors to help them carry out their research and develop their career plans. Whereas some courses enabling students to acquire additional skills relevant to their job-market integration are offered (for example “Technical paper writing and grant application”, “Biochemistry practical teaching and demonstration”, “ICT and research methodology”), there are no means of acquiring certifications.

In conclusion, the structure of the study programme and the teaching methods used are adapted to the target competences. They involve socio-economic actors, especially for the Management and Entrepreneurship course, but stronger links and involvement of these partners could be implemented in the programme. Students

have access to a range of courses (elective and core) and facilities, and are required to undertake 12 to 18 months of research to complete their curricula. The several elective courses proposed by the programme allow the students to specialize and offer career flexibility. Although different types of teaching environments exist, the programme would benefit from diversifying its teaching practices (project-based teaching, inverted classes, for instance). Because of the Nigerian economic and safety context, outgoing and ingoing mobility are limited. Nevertheless, language support for non-English-speaking foreign students is provided.

3 – ATTRACTIVENESS, PERFORMANCE AND RELEVANCE OF THE STUDY PROGRAMME

During the visit, the information given is that some students come from other universities in Nigeria, due to the specificities of the programme and the quality of research and teaching activities. The information system proposed by the programme is mainly based on their website, which is accessible through the website of the Department of Biochemistry. Through this access, students are fully and well guided on how it is possible to apply to the programme, the requirements, and the curricula. There is no information on how the programme measures its attractiveness towards the different types of audience.

The success rate of the students is monitored by the programme and has been provided during the visit. It appears that these data are not specifically analysed, made public nor have an impact on the curriculum provided. It must be underlined that during the evaluated period (2019-2023), two years were nearly blank for students, due to large strikes and Covid-19 pandemic.

Theoretically, graduates of M.Sc. Biochemistry have job opportunities in the following fields: Federal and State Ministries (Education, Health, Science, and Technologies); research institutes and agencies; Universities and other tertiary institutions; Non-Governmental Organizations (NGOs); private sector. The students are prepared to pursue Ph.D. studies in Biochemistry. The job-market is analysed basically through one criterion: whether the graduate student works in a public institution or a private company. No more detailed information is provided. Moreover, a simple document is sent to alumni with several questions on their perception of the programme. No information has been provided concerning the results and the consequences of the reception of these documents.

In conclusion, the programme is minimally monitored in terms of its attractiveness, performance and relevance. Yet, basic data on student success and integration are provided. The monitoring of outcomes is not fully formalised, but the Centre is able to identify students' further studies and integration into the labour market. However, it appears that the data is not used sufficiently to monitor and propose changes to the programme.

4 – ACADEMIC PROGRAMME MANAGEMENT AND CONTINUOUS IMPROVEMENT

The programme is managed by a post-graduate coordinator and a post-graduate teaching coordinator, which both have a broad vision of the training. However, there is no year manager for the programme. While the teaching team's roles and responsibilities are not clearly defined, the teaching staff is clearly identified and includes 44 Professors, Senior Lecturers or Lecturers. All of them have different areas of specialisation which enable the pluridisciplinarity of the class taught.

The institution's human resources policy considers the management needs of the programme. Indeed, academic staff workload is based on the Course Credit System (CCS) which has been defined by the National Universities Commission as "consisting of a specified number of student-teacher contact hours per week per semester". The programme has sufficient administrative and pedagogical resources to fulfil its mission. Several research facilities are accessible to the students of the programme as well as virtual and physical teaching platforms (two dedicated lecture rooms plus other ones for the Department of Biochemistry, one seminar room, computer room, online library). Teaching staff gets different training during their career (e.g., pedagogy training) and newly recruited members of staff are mentored. The incoming and outgoing mobility are limited because of difficulties to getting visas and economic and safety issues in Nigeria.

Apart from being able to evaluate each course at the end of it, postgraduate students have a Students Representative Council recognized by all arms of the university and, as such, serves as a mean of reaching out to the university on any academic or social issues related to students and grievances. At the departmental level, there exists a class representative for each set who has direct access to the leadership of the department and all course tutors and coordinators. The class representatives serve as a channel and source of feedback on issues pertaining to academic and social activities. The programme undergoes an external evaluation once every five years by the National Universities Commission.

Student recruitment procedures are clearly defined in the student handbook as well as on the University website. To be considered for admission into the programme, the applicant must have five credit passes at O'Levels (English language, Mathematics, Biology, Chemistry, and Physics), have a first degree in Biochemistry with at least a Second Class honour, at least two favourable letters of recommendation (one must be from the

applicant's previous academic advisor). Other degrees are accepted, but candidates may be required to take some undergraduate courses. Requirement for graduation are well-defined in the student handbook. To successfully complete the coursework aspect of the programme, students are required to take and pass all taught core courses (twenty-four credit units) and a minimum of six-credit-unit of elective courses. In addition to that, students have to carry out a twelve to eighteen-month research project in a specific area of Biochemistry, present two seminars (first, on their proposed research work and second, on their research findings) and submit an acceptable dissertation which is evaluated by a committee of examiners comprising external examiner and two other examiners. At the end of each course, the students can fill a "staff and resource assessment form" to evaluate the course, the lecturer, and the resources. However, the lecturer and the director of the programme only get some feedback in cases of negative evaluations. The programme does not receive the global feedback, which does not allow for a thorough analysis. In addition to teaching an "ICT and Research Methodology" class in which Ethics in research is taught, the programme benefits from the university anti-plagiarism, anti-fraud and anti-corruption measures described by the Policy on Quality Assurance. The University policy on Research Ethics is aimed at protecting the integrity of the University and staff in the areas of research and scholarship. Two University Ethics subcommittees are related to the University Board of Research: The Animal Care Sub-Committee and the Committee on Human Subjects. The University Board of Research has the authority to recommend the termination of any project that does not meet ethical standards.

In conclusion, the programme is managed and implemented by a formally identified teaching team and relies on a quality-and ethics-based approach. The programme also has sufficient administrative, pedagogical and human resources to fulfil its mission and undergoes an external evaluation by the National Universities Commission every five years. Students are involved in the management of the programme through the Students Representative Council which allows them being part of the University processes. Students recruitment procedures are clearly defined and brought to the attention of the stakeholders. However, the M.Sc. in Biochemistry could benefit from more precise internal evaluation processes and by involving the teaching staff in the analysis of the students' evaluation of the courses.

VI. CONCLUSION

The documents required for the evaluation were provided, including the general framework documents for Ahmadu Bello University and the Department of Biochemistry, as well as the programme syllabus, lists of students recruited, grants obtained by professors and part of the Ph.D. students, etc. All these factual elements were confirmed during the visit. People interviewed during the visit showed that there was very good cohesion and understanding between the staff, the academics, and the students.

Two important elements that were highlighted and explained during the visit were justifying the current socio-economic context in Nigeria. Firstly, the country's economic situation is difficult, and this has a direct impact on the funding of the programme. Secondly, the safety situation is also complicated, making international mobility and exchanges difficult. It is important to take these two factors into account, and to weigh the evaluations directly affected by these points.

The structure of the M.Sc. Biochemistry programme and its integration within the Department of Biochemistry, as well as Ahmadu Bello University, benefit from more than twenty years' significant operating experience. As a result, the entire process of obtaining an M.Sc. is very well explained and accessible to students. Whether it is through the student handbook, the university website or even through their direct interactions with the staff, students have access to all the necessary information concerning the recruitment process, graduation requirements, courses taught and internship opportunities. During the programme, it is also noted that the supervision of M.Sc. students is of a high standard by at least two supervisors. Moreover, students have access to the various resources they need for their work: research equipment, computers, free Wi-Fi, analytical materials, bibliographic resources, etc. All these factors show that this programme is operating very satisfactorily. Therefore, the programme is very well established in the university and Nigerian landscape.

The university's external outreach is not entirely satisfactory. As explained above, these elements need to be weighed against the economic and safety contexts. First, it was noted that the programme is more directed towards the academic job market than the private sector. This point was justified in part by an internal orientation in the department of Biochemistry, in which the M.Sc. Biotechnology is more private companies-oriented and the M.Sc. Biochemistry more research-oriented. However, students in this Biochemistry programme should be more aware of the socio-economic world, for example by involving more partners from private companies and encouraging students to carry out their project research in private companies. Similarly, the international dimension is limited. Some agreements exist with foreign universities, but the impact on real incoming and outgoing mobility is fragile, near non-existent whether it is for staff or students. In addition, it is important to point out that some of the department's professors have obtained grants from various organisations, thereby increasing the programme's financial resources. However, this results in a low number of students receiving grants, which is a negative point. Finally, the follow-up of M.Sc. after graduation is fairly basic (for those who do not pursue the Ph.D. programme), as is the alumni network. It would be interesting to develop this follow-up more systematically, to increase links with the socio-economic world. Finally, the programme could also benefit from more precise and efficient internal evaluation processes.

The programme appears to be scientifically relevant, functional, and highly structured. Additional openings towards the international and socio-economic world would enable it to reach the best international standards.

STRENGTHS

- Very well-structured programme in terms of procedures and functioning
- Well integrated in Ahmadu Bello University and the Department of Biochemistry with a consistent strategy at the University level and the Department level
- High quality of teaching and supervision by a clearly identified academic team
- Access to various scientific equipment and library
- Students pursuing the Ph.D. programme

WEAKNESSES

- Low involvement of the socio-economic world
- Few grants for the students
- Not sufficiently developed alumni network and follow-up
- Low diversity of teaching practices
- Attractiveness of the programme, in the international context, mainly in West Africa

RECOMMENDATIONS

- As most students come from Ahmadu Bello University, develop the attractiveness of the programme at the national level by offering better access to participation in national congresses and workshops
- Increase the involvement of the socio-economic world by allowing the partners to take part in courses and by including them in workshops, physically at the University
- Implement tools to increase scholarships possibilities and to make institutions aware of the need for student scholarships and not only research grants for the faculty members
- Develop an efficient alumni network to enhance the attractiveness of the programme and improve formal discussions between students and alumni during workshops and seminars
- Diversify the teaching practices by implementing project-based teaching, inverted classes

VII. COMMENTS OF THE INSTITUTION



ACENTDFB



AFRICA CENTRE OF EXCELLENCE FOR NEGLECTED TROPICAL DISEASES AND FORENSIC BIOTECHNOLOGY
AHMADU BELLO UNIVERSITY, ZARIA-NIGERIA
email address: acentdfb.abu.edu.ng

VICE CHANCELLOR: Prof Kabir Bala, BSc (Hons) Building, MSc, MBA, PhD (Const. Mgt) FNIQB, MAPM, MCABE, C. Bldg E. MICI Arb
CENTRE LEADER: Prof. Y.K.E. Ibrahim, B.Sc. Pharm., M.Sc. Pharm. (ABU), Dr. Sc.hum. (Heidelberg)

Friday 09, 2024

Ref: ACENTDFB/Accreditation/MSc Biochem/01

Maria Bonnafous-Boucher
Director of the Europe & International Department
HCERES
2 rue Albert Einstein
75013 Paris, France

Response to the Draft Report on MSc Biochemistry Accreditation

In our response, we looked at each of the six sections of the draft report, namely: Presentation of the Study Programme; Composition of the Expert Panel; Visit Description; Evaluation Report and Conclusion

I. Study Programme Identity Sheet (Page 2)

The information provided in this section aptly describes the PhD Biochemistry program of the Department.

II. Presentation of the Study Programme (Page 3)

An error was observed in this sentence. Second paragraph, Line 1-2: The MSc. Biochemistry programme was created in 1973, **but it has been hosted by the ACENTDFB since the presentation of the ACE Project.** It should be modified to read: **The Msc Biochemistry programme was created in 1973 and has since been hosted by the Department of Biohemistry in which the Biotechnology programmes are domiciled.**

IV. Visit Description (Pages 3-4)

The report under this section is accurate. We have no contesting issue.

V. Evaluation Report (Page 5)

1. Doctoral Policy

While the report is largely correct, there is an error in the name of one of the collaborating partners.

Paragraph 3, line 1-2: International partnership are developed mainly with **Bobo-Dioulasso Polytechnic Institute in Burkina Faso**, Kwame Nkrumah University of Science and Technology in

Ghana, Bremen University in Germany, Centre for Science & Technology of the Non-Aligned and Other Developing Countries in India and University of Johannesburg in South Africa. It should read: **International partnership are developed mainly with International Centre for Research and Development in Livestock in the sub-humid Zone (CIRDES), Bobo Dioulasso, Burkina Faso, Kwame Nkrumah University of Science and Technology in Ghana, Bremen University in Germany, Centre for Science & Technology of the Non-Aligned and Other Developing Countries in India**


VI. Conclusion (page 9-10)

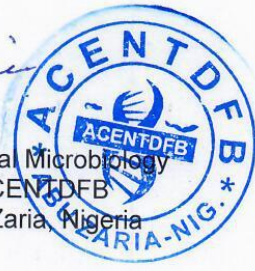
The conclusion which is drawn from the self-assessment submission we made and the interactions held by the Panel with the various stake holders is valid and unbiased, and a true reflection of the status of the PhD program.

Not only did the report describe the state of the program, it identifies weaknesses, points out the explanation offered and in many cases, offers remedial actions to addresses the observed deficiencies.

We generally appreciate the frankness in the report and we find the suggestions/recommendations very useful. We believe that these suggestions will help us to further improve the quality of the Biochemistry MSc degree program.

Yours sincerely,


YKE Ibrahim, Dr.sc.hum
Professor of Pharmaceutical Microbiology
Centre Leader/Director, ACENTDFB
Ahmadu Bello University, Zaria, Nigeria



Tel.: +234 8037001988
email: ykeibrahim@gmail.com; ykeibrahim@abu.edu.ng

cc., Zakia Mestari

The evaluation reports of Hceres
are available online : www.hceres.com

Evaluation of higher education and research institutions

Evaluation of research

Evaluation of academic programmes

Evaluation of research bodies

International evaluation and accreditation



2 rue Albert Einstein
75013 Paris, France
T. 33 (0)1 55 55 60 10

hceres.fr

[@Hceres_](https://twitter.com/Hceres_)

[Hcéres](https://www.youtube.com/Hceres)

ACCREDITATION DECISION

M.Sc. Biochemistry

Department of Biochemistry

Ahmadu Bello University

Zaria, Nigeria

March 2024

SCOPE OF THE ACCREDITATION GRANTED BY HCÉRES

HCÉRES has based its evaluation process on a set of objectives that study programmes must pursue to ensure recognised quality within France and Europe. These objectives are divided up into four accreditation criteria.

The Accreditation Commission issues an opinion about the accreditation of the study programme after examining the file. The Hcéres President takes the decision based on the Commission's opinion and the final evaluation report of the programme. This accreditation decision, taken in plenary session, is the result of a collegial and reasoned process.

The decision issued by Hcéres regarding the accreditation of the study programme corresponds to the awarding of a label to the evaluated entity.

This decision is independent of the accreditations carried out by the French State and therefore does not entail recognition in France of the institution or the diplomas delivered by it.

Decision No. EI-2024-8 on the accreditation of the M.Sc. Biochemistry, Ahmadu Bello University, Zaria, Nigeria

The President of the High Council for the Evaluation of Research and Higher Education,

Considering the Research Code, in particular Articles L. 114-3-1 to L. 114-3-6;

Considering the Decree No. 2021-1536 of 29th November 2021 on the organisation and operation of the High Council for the Evaluation of Research and Higher Education;

Considering the Board's deliberation of 29th September 2022 on the accreditation criteria for international study programmes (except doctorates/PhDs);

Considering the Decision No. 2023-9 of 16th March 2023 on the international accreditation procedure of the High Council for the Evaluation of Research and Higher Education;

Considering the agreement No. DEI_2023_CONV17 – NUC, signed on 14th June 2023 for the evaluation/accreditation of study programmes delivered by Africa Centres of Excellence;

Considering the opinion issued by the Accreditation Commission on 29th February 2024;

Decides:

Article 1

Noting that the M.Sc. Biochemistry meets the four accreditation criteria, voted by the Board of the High Council on 29th September 2022, as follows:

ACCREDITATION CRITERION 1 – TEACHING POLICY AND CHARACTERISATION

The study programme is totally consistent with the institution's educational training strategy at the Ahmadu Bello University level as well as at the National Universities Commission (NUC) level and recognised by the World Bank as an Africa Centre of Excellence. It has a central and coherent position in the Biochemistry department of the University and among the other proposed programmes. The study programme addresses all required thematic and courses, including an interdisciplinary approach for the different scientific needs and for entrepreneurship. Moreover, the programme is effectively backed by research units and partially funded by research funds and bodies.

Although there are some signed agreements with foreign universities, there is no international mobility. This is explained by the national situation (scarcity of funds, security). In addition, the socio-economic world is not sufficiently involved in training. This is justified by the research-oriented strategy of the programme, but ultimately the links are still too weak for an M.Sc. programme. The programme appears to be scientifically relevant, functional, and highly structured. Additional openings towards the international and socio-economic world would enable it to reach the best international standards.

ACCREDITATION CRITERION 2 – THE PEDAGOGICAL ORGANISATION OF THE STUDY PROGRAMME

The structure of the study programme and the teaching methods used are adapted to the target competences. They involve socio-economic actors, especially for the Management and Entrepreneurship course, but stronger links and involvement of these partners could be implemented in the programme. Students have access to a range of courses (elective and core) and facilities, and are required to undertake 12 to 18 months of research to complete their curricula. The several elective courses proposed by the programme allow the students to specialize and offer career flexibility.

Although different types of teaching environments exist, the programme would benefit from diversifying its teaching practices (project-based teaching, inverted classes, for instance). Because of the Nigerian economic and safety context, outgoing and ingoing mobility are limited. Nevertheless, language support for non-English-speaking foreign students is provided.

ACCREDITATION CRITERION 3 – ATTRACTIVENESS, PERFORMANCE AND RELEVANCE OF THE STUDY PROGRAMME

The programme is minimally monitored in terms of its attractiveness, performance and relevance. Yet, basic data on student success and integration are provided. The monitoring of outcomes is not fully formalised, but the Centre is able to identify students' further studies and integration into the labour market. However, it appears that the data is not used sufficiently to monitor and propose changes to the programme.

ACCREDITATION CRITERION 4 – MANAGEMENT AND CONTINUOUS IMPROVEMENT OF THE ACADEMIC PROGRAMME

The programme is managed and implemented by a formally identified teaching team and relies on a quality-and ethics-based approach. The programme also has sufficient administrative, pedagogical and human resources to fulfil its mission and undergoes an external evaluation by the National Universities Commission every five years. Students are involved in the management of the programme through the Students Representative Council which allows them being part of the University processes. Students recruitment procedures are clearly defined and brought to the attention of the stakeholders. However, the M.Sc. in Biochemistry could benefit from more precise internal evaluation processes and by involving the teaching staff in the analysis of the students' evaluation of the courses.

Article 2

The M.Sc. Biochemistry, Ahmadu Bello University, Zaria, Nigeria, is accredited for a period of 3 years, which may be extended for two years, subject to a follow-up that may include an on-site visit.

Article 3

The decision is accompanied by the following recommendations and comments:

- make efforts to systematise and formalise internal quality assurance indicators, which would enable informed management and ensure that the quality of the programme is maintained over the long term;
- diversify teaching practices by implementing project-based teaching, inverted classes (flipped classrooms);
- involve the socio-economic partners by enhancing their participation in courses and by including them in workshops and seminars.

Article 4

This decision will be published on the Hcéres website.

Paris, 15th March 2024.

The acting President
signed
Stéphane Le Boulter



2 rue Albert Einstein
75013 Paris, France
T. 33 (0)1 55 55 60 10

hceres.fr

[@Hceres_](https://twitter.com/Hceres_)

[Hcéres](https://www.youtube.com/Hceres)

