

# Undergraduate and Postgraduate Strength and Conditioning Course Recognitions and Accreditations in the United Kingdom: A Report Study

Anthony Weldon<sup>1,2</sup>, Kevin Till<sup>3</sup>, Jonathan Hughes<sup>4</sup>, Ibrahim Akubat<sup>5</sup>, James Keenan<sup>6</sup>, Andrea Cameron<sup>7</sup> & Anthony Turner<sup>8</sup>

<sup>1</sup>Centre for Life and Sport Sciences, Birmingham City University, Birmingham, UK, <sup>2</sup>Aston Villa Foundation, Birmingham, UK, <sup>3</sup>Carnegie School of Sport, Leeds Beckett University, Leeds, UK, <sup>4</sup>Youth Physical Development Center, Cardiff School of Sport and Health Sciences, Cardiff Metropolitan University, Cardiff, UK, <sup>5</sup>Exercise and Health Research Centre, Birmingham Newman University, Birmingham, UK, <sup>6</sup>School of Human Sciences, University of Derby, Derby, UK, <sup>7</sup>School of Applied Sciences, Abertay University, Dundee, UK, <sup>8</sup>Faculty of Science and Technology, London Sport Institute, Middlesex University, London, UK

## ABSTRACT

As the popularity of strength and conditioning (S&C) continues to grow, there are now an increased number of S&C degrees offered in the United Kingdom (UK). These degrees can be recognised and accredited by the National Strength and Conditioning Association (NSCA), the Chartered Institute for the Management of Sport and Physical Activity in collaboration with the United Kingdom Strength and Conditioning Association (CIMSPA-UKSCA), and the International Universities Strength and Conditioning Association (IUSCA). As each association requires different and specific criteria to be met this paper aimed to summarise this information and present the number of S&C degrees recognised and accredited in the UK. Criteria for each awarding association were obtained and consolidated into a checklist format. The number of courses recognised and accredited by each awarding association was obtained by reviewing the websites of each S&C degree, which were sourced from the Universities and Colleges Admissions Service

(UCAS), NSCA, UKSCA, and IUSCA directories. In total, 20 undergraduate and 29 postgraduate courses were identified. The NSCA recognised 10 undergraduate and 12 postgraduate courses, CIMSPA-UKSCA accredited 11 undergraduate and 7 postgraduate courses, and IUSCA accredited 5 undergraduate and 2 postgraduate courses. Our findings show that recognitions are inexpensive compared to accreditations due to fewer criteria. Most undergraduate degrees held 1-2 recognitions or accreditations, which was 0-1 for postgraduate degrees. All recognitions require specific module, practical, and assessment content to be covered, which in part should be delivered by staff holding a discipline-specific undergraduate or postgraduate degree accompanied with a professional S&C certification. All accreditations require courses to include supervised practical experience and evidence suitable learning environments. The NSCA and IUSCA accreditations require degree titles to indicate the course specialisation (e.g., BSc in S&C) and include a site visit to validate and accredit each course. The CIMSPA-UKSCA and IUSCA accreditations require courses to evidence

that transferable graduate knowledge and skills are being developed. This paper may inform (a) course representatives of the criteria to obtain each recognition or accreditation; (b) prospective students to understand and distinguish between each recognition and accreditation, and observe which degrees have received each award; (c) potential employers to tailor job profiles to align with graduate capabilities; and (d) awarding associations to compare and review their recognitions and accreditations with others, to support their continued enhancement or diversification.

## INTRODUCTION

The growing interest in strength training led to The National Strength and Conditioning Association (NSCA) being formed in 1978. This was followed by the Australian Strength and Conditioning Association (ASCA) in 1992, the United Kingdom Strength and Conditioning Association (UKSCA) in 2004, and the International Universities Strength and Conditioning Association (IUSCA) in 2019. A common aim across these S&C associations is to establish and maintain industry, education, and best practice standards. Each S&C association supports this by providing access to research journals, career development opportunities, networking, education, and accreditation pathways.

Traditionally, strength and conditioning (S&C) may be viewed as an S&C coach working independently with athletes to mitigate injury risk, develop physical abilities, and improve sporting performance<sup>1</sup>. However, with the growth and evolution of S&C, it now intersects with various responsibilities and professions, including data analysts, sports scientists, personal trainers, tactical professionals, researchers, and educators. To standardise and recognise the academic knowledge and practical experience of S&C coaches, each S&C association offers accreditation pathways, with each having its own criteria. For example, the NSCA certified strength and conditioning specialist (CSCS) and IUSCA accredited international strength and conditioning practitioner (aISCP) require applicants to possess a degree, whereas the UKSCA accredited strength and conditioning coach (ASCC) does not. However, it is broadly acknowledged by these S&C associations that discipline-related higher education (HE) assists practitioners in the development of knowledge and ability to deliver safe and effective S&C provisions. While it also demonstrates that degree programs

have constructive alignment with industry<sup>2</sup>.

This has led to S&C associations developing course recognition and accreditation awards for HE programs. For context, recognitions require less stringent criteria, standards, and procedures to be obtained compared to accreditations (Tables 1 and 2). Accreditations enable external bodies to conduct a systematic process to evaluate whether courses meet a set of criteria, standards, and procedures, with the objective that graduates can meet the required knowledge and capabilities of their discipline<sup>3</sup>. The NSCA Education Recognition Program (ERP) was the first to offer an award, recognising its first school in 2000<sup>4</sup>. This was followed in 2019 by the Chartered Institute for the Management of Sport and Physical Activity (CIMSPA) in collaboration with the UKSCA (hereafter termed CIMSPA-UKSCA), which released professional standards mapping criteria to accredit degree programs and also graduates of these programs with the title 'graduate S&C coach' (GSCC). As CIMSPA possesses Royal Charter Status, the UKSCA aims this collaboration can lead to the professionalisation of S&C in the UK<sup>5</sup>. Most recently, in 2021, the IUSCA launched a degree accreditation program, and in 2022, the NSCA established the Council on Accreditation of Strength and Conditioning Education (CASCE). Evidence suggests that external body accreditations verify the competence of a course, promote quality improvement, and enhance the learner's experience<sup>6</sup>.

Twenty undergraduate and 29 postgraduate S&C degrees are now offered in the United Kingdom (UK). Given the benefits of external recognition and accreditation, there has been an upward trend in S&C degrees obtaining these. However, each recognition and accreditation has its own comprehensive criteria, standards, and procedures to be met, which may add complexity to the process when obtaining one or more. Therefore, this paper aims to provide an overview and summarise the available recognition and accreditation options for S&C degree courses in the UK and to present the number of programs recognised and accredited by each awarding association. This consolidated information will be useful to key stakeholders, including existing and prospective HE course representatives (i.e., program directors and academic staff), students, employers, and awarding associations. For HE representatives, the presented data will provide existing and developing S&C degrees the ability to make informed decisions

about which recognition or accreditation should be pursued and to think critically about their alignment with recognition and accreditation criteria, standards, and procedures. For students, distinguishing the difference between recognitions and accreditations and those universities that possess them may inform their decision when selecting an S&C degree or further understanding their course alignment with each awarding association and potential employment. Employers may use this information to revise or inform their job profiles and person specifications for future roles based on the expected knowledge, skills, and experience that graduates should possess after completing a recognised or accredited S&C degree course. Finally, for awarding associations, this information can support reviewing and enhancing recognitions and accreditations offered.

## METHODS

### *Strength and Conditioning Accreditations*

Three awarding associations (NSCA, CIMSPA-UKSCA, and IUSCA) recognise and accredit undergraduate and postgraduate S&C degrees in the UK. Each awarding association provides detailed criteria, standards, and procedures available for courses to obtain recognition or accreditation. These criteria were requested and entered into a Microsoft Excel workbook (Microsoft Corporation, Redmond, Washington, USA). Given the comprehensive nature of these criteria, they were summarised and consolidated (Tables 1 and 2) to present the general guidelines to apply for recognition and accreditation by the lead author (AW), which was agreed upon by the senior (final) author (AT), and the respective administration teams of each S&C association via email correspondence.

### *Course Eligibility Criteria*

To review the number of S&C degrees in the UK recognised and accredited with each awarding association, courses had to meet the following inclusion criteria: (a) validated by a HE institute in the UK; (b) a minimum duration of three years for undergraduate and one year for postgraduate; (c) offered during the 2023-2024 academic year; and (d) eligible to apply for recognition or accreditation with awarding associations. The lead author (AW) and senior (final) author (AT) performed a detailed review of S&C courses in the UK to ensure the selected criteria were relevant.

### *Course Search Strategy*

The lead author AW searched for undergraduate and postgraduate S&C degrees between the 23rd and 25th of July 2023, before the 2023-2024 academic year. Searches were conducted initially using the UKSCA directory (<https://uksca.org.uk/SandC-degrees>), followed by the Universities and Colleges Admissions Service (UCAS) (<https://digital.ucas.com/search>) directory. The UKSCA directory was standalone and did not require any search terms, whereas the UCAS directory was explored using the search term “strength and conditioning”. These directories were deemed appropriate sources for S&C courses in the UK.

### *Data Collection Process*

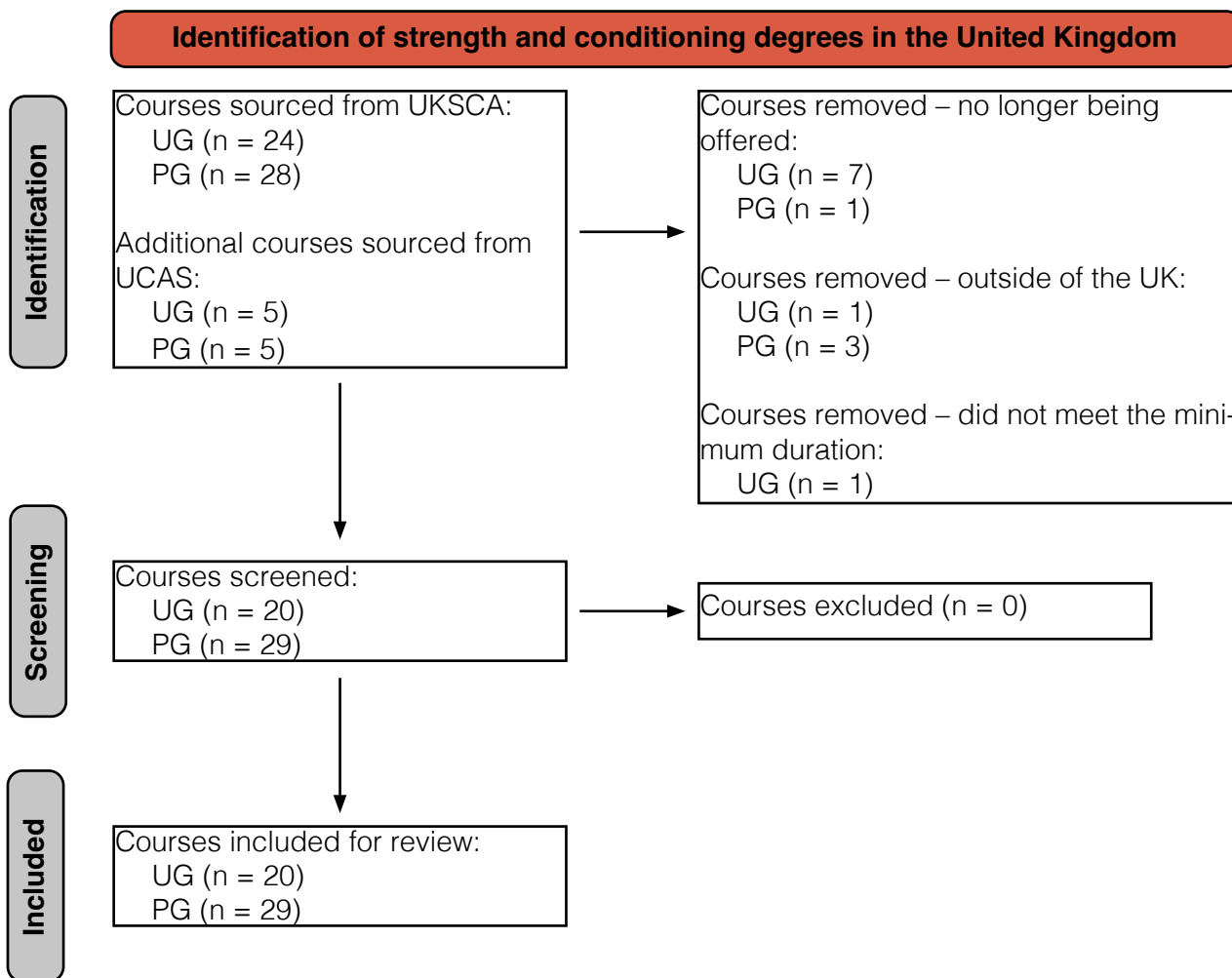
The recognitions and accreditations held by each S&C degree included in this report were accessed via their respective web pages and the directories of the awarding S&C associations. All data were manually extracted into a Microsoft Excel workbook (Microsoft Corporation, Redmond, Washington, USA) by the lead author (AW) and agreed upon by the senior (final) author (AT).

### *Data Analysis*

All S&C degree course recognition and accreditation information was summarised and descriptively reported, and the number of courses recognised and accredited was assessed using frequency analysis.

## RESULTS

A summary of information (Table 1) and consolidated checklist (Table 2) for undergraduate and postgraduate S&C recognition and accreditation with each awarding association is presented below.



**Figure 1.** Flowchart illustrating the inclusion and exclusion of undergraduate and postgraduate strength and conditioning degrees in the United Kingdom selected for review.

*UKSCA – the United Kingdom Strength and Conditioning Association; UCAS – the Universities and Colleges Admissions Service; UG – undergraduate; PG – postgraduate.*

**Table 1.** A summary of information for undergraduate and postgraduate strength and conditioning degree course recognition and accreditation for the 2023-2024 academic year.

Course level	UG	PG	UG/PG	UG/PG	UG/PG
Awarding association	NSCA	NSCA	NSCA	CIMSPA-UKSCA	IUSCA
Recognition or accreditation title	ERP	ERP	CASCE	CIMSPA Endorsed Degree Programme	IUSCA Degree Accreditation Program
Submission deadlines	April, October	April, October	October – December	February, April, June, August, October, December	Anytime
Total fees (i.e., application, recognition, accreditation)	\$500	\$500	\$6000*	£936	£1,995
Annual fee	\$0	\$0	\$1000	\$0	\$0
Duration before renewal	3yrs	3yrs	5yrs	1yr	5yrs
Renewal fee	\$400	\$400	\$7000	£780	£500
Aggregated annual fee	\$167	\$167	\$2000	\$936	\$399
Discounts	5% off additional course applications	5% off additional course applications	50% off second course applications, \$500 off if the course has prior NSCA ERP recognition, and \$50 off the CSCS examination	>3 courses accredited free of charge	50% off additional course applications
Staff requirements	1. One staff member must hold a CSCS certification	1. One staff member must hold a CSCS certification 2. One staff member must be an active participatory member of the NSCA (e.g., writing research papers in S&C)	1. Each staff member teaching S&C-related content must hold a CSCS certification 2. The program director must: a. hold a CSCS certification b. hold a discipline-related PG degree c. meet various administrative and role-specific requirements commensurate with their role and that of peer institutes 3. Field experience coordinator must: a. meet various administrative and role-specific requirements commensurate with their role and that of peer institutes 4. Field experience site supervisor must: a. hold a CSCS certification	1. Students must be assessed in specific assessments (i.e., case study) by a staff member holding a discipline-related accreditation (i.e., GSCC, ASCC).	1. A senior staff member must hold a discipline-related PG degree 2. Each staff member must hold a discipline-related UG degree 3. Each staff member teaching S&C practical-related content must: a. Hold a discipline-related certification or accreditation (e.g., CSCS, aISCP, ASCC)

UG – undergraduate; PG – postgraduate; NSCA – the National Strength and Conditioning Association, ERP – Education Recognition Program; CASCE – Council of Accreditation of Strength and Conditioning Education Accreditation; CIMSPA – the Chartered Institute for the Management of Sport and Physical Activity; UKSCA – the United Kingdom Strength and Conditioning Association; IUSCA – the International Universities Strength and Conditioning Association; S&C – strength and conditioning; CSCS – Certified Strength and Conditioning Specialist; ASCC – Accredited Strength and Conditioning Coach; GSCC – Graduate Strength and Conditioning Coach; aISCP – Accredited International Strength and Conditioning Practitioner.

\*Programs based in the United Kingdom must pay for all additional expenses (e.g., travel, accommodation) for course accreditation.

**Table 2.** A consolidated checklist of criteria for undergraduate and postgraduate strength and conditioning degree course recognition and accreditation for the 2023-2024 academic year.

Course level Awarding association	UG NSCA	PG NSCA	UG/PG NSCA	UG/PG CIMSPA-UKSCA	UG/PG IUSCA
Recognition or accreditation title	ERP	ERP	CASCE	CIMSPA Endorsed Degree Programme	IUSCA Degree Accreditation Programme
Degree title must be indicative of course specialisation (e.g., include the term S&C)	N	N	Y	N	Y
Self-study requirement (e.g., self-reflection of the programs strengths and weaknesses over an academic year)	N	N	Y	N	N
Site-visit (e.g., reviewers will conduct an on-site visit to validate the course)	N	N	Y	N	Y
Specified module topics or content (e.g., physiology, nutrition)	Y	Y	Y	Y	Y
The course must develop practical S&C skills (e.g., instruction and demonstration of resistance training movements)	Y	Y	Y	Y	Y
Specified assessment items (e.g., practical coaching of resistance training movements)	Y	Y	Y	Y	Y
The course must offer a placement or supervised practical experience	N	Y	Y	N	Y
The course must align with professional industry standards (e.g., ethical and legal boundaries in S&C)	N	N	Y	Y	Y
Development of transferable graduate knowledge and skills (e.g., computer literacy, safeguarding)	N	N	N	Y	Y
Quality assurance (e.g., qualified internal and external verifiers, tutors, and assessors)	N	N	Y	Y	Y
Learning environment (e.g., appropriate equipment, facilities, and resources for S&C program delivery and student learning)	N	N	Y	Y	Y

*UG – undergraduate; PG – postgraduate; NSCA – the National Strength and Conditioning Association, ERP – Education Recognition Program; CASCE – Council of Accreditation of Strength and Conditioning Education Accreditation; CIMSPA – the Chartered Institute for the Management of Sport and Physical Activity; UKSCA – the United Kingdom Strength and Conditioning Association; IUSCA – the International Universities Strength and Conditioning Association; S&C – strength and conditioning.*

Overall, 62 S&C degrees (29 undergraduate and 33 postgraduate) were identified using the search strategy outlined in Figure 1. After removing courses that did not meet the inclusion criteria, 49 courses (20 undergraduate and 29 postgraduate) were included for further analysis. Note that three undergraduate programs were delivered by further education providers but validated by local HE institutes. All courses were reviewed and agreed for inclusion by the lead author (AW) and senior (final) author (AT). The number of courses recognised and accredited by each awarding association is presented in Table 3.

## DISCUSSION

This is the first study to summarise and report the available recognition and accreditation options for S&C degrees in the UK and to present the frequency of courses recognised and accredited by each awarding association. The following will discuss the recognition and accreditation requirements of these associations in a step-by-step format.

### Recognised and Accredited Courses

These results show that most S&C degrees were recognised under the NSCA ERP ( $n = 22$ ), followed by CIMSPA-UKSCA ( $n = 18$ ) and IUSCA ( $n = 7$ ). The NSCA ERP was the first to launch (2000) and has the least stringent criteria, so the higher level of affiliation may reflect this. Furthermore, the costs and criteria may also be perceived as more accessible. Conversely, the NSCA CASCE has yet to accredit any UK S&C degrees, possibly due to being a more recent accreditation (2022), having more stringent criteria, and highest associated

costs (\$7000+). According to the NSCA website, 12 HE providers in the United States of America are pursuing initial accreditation for CASCE. The uptake of these recognitions and accreditations allows courses to demonstrate that they meet the criteria, standards, and procedures outlined by these awarding associations<sup>3,5,6</sup>. Furthermore, it provides graduates with the requisite knowledge and ability to obtain professional S&C qualifications (e.g., CSCS, ASCC, or aISCP). Such qualifications are becoming a growing requirement from employers in this industry<sup>7</sup> and are considered a key component in supporting the professionalisation of sport science disciplines<sup>8</sup>.

Table 3 shows that most (80%) undergraduate S&C degrees possessed one or two recognitions or accreditations, which was less frequent at postgraduate level, with 48% of courses without recognition or accreditation. The reasons for this are unknown. It may be speculated that it is easier to meet the awarding associations' criteria, standards, and procedures over a three year compared to a one year S&C degree. For example, our data on UK S&C degrees shows that at the undergraduate level, 95% of courses have a compulsory placement module, which is only 59% at the postgraduate level. Therefore, observing the placement and supervised experience requirements across recognitions and accreditations, postgraduate S&C degrees may not meet them. It is also unknown whether obtaining one or more recognition or accreditation leads to improved course quality (i.e., delivery and learning), student recruitment, and income generation. However, concurrently obtaining various recognitions and accreditations across awarding associations demonstrates that all the required criteria, standards, and procedures

**Table 3.** A summary of the number of strength and conditioning degrees in the United Kingdom recognised and accredited by awarding associations.

Item	Description	UG (n = 20)	PG (n = 29)
The number of courses that hold each recognition and accreditation	NSCA (ERP)	10	12
	NSCA (CASCE)	0	0
	CIMSPA-UKSCA	11	7
	IUSCA	5	2
The number of recognitions and accreditations held by individual courses	None	3	14
	One	9	11
	Two	7	2
	Three	1	2
	Four	0	0

UG – undergraduate; PG – postgraduate; S&C – strength and conditioning; NSCA – the National Strength and Conditioning Association; ERP – Education Recognition Program; CASCE – Council on Accreditation of Strength and Conditioning Education; CIMSPA – the Chartered Institute for the Management of Sport and Physical Activity; the UKSCA – the United Kingdom Strength and Conditioning Association; IUSCA – the International Universities Strength and Conditioning Association.

have been met, which may reflect positively on a courses structure and curriculum design. However, it is not reflective of the quality of a course if they do not possess recognition or accreditation, as course representatives may have chosen not to apply or are yet to apply for recognition or accreditation, which prospective students should consider.

### *Purpose of Recognitions and Accreditations*

By reviewing the descriptors of all recognitions and accreditations, a prominent aim of each awarding association is to recognise or accredit S&C degrees that meet a set of criteria, standards, and procedures to ensure graduates obtain the relevant skills and knowledge to succeed. While it is commonplace in the S&C industry that graduates not only possess a relevant degree and skill-set but also professional qualifications (e.g., NSCA CSCS, UKSCA ASCC, or IUSCA aISCP)<sup>2,7</sup>. Accordingly, each associations recognition and accreditation offerings align with their respective accreditation pathways (Table 4).

### *Fees (Application, Renewal, Discount)*

The NSCA ERP appears to be the most cost-effective (per annum) of all recognitions and accreditations. However, this is a course recognition, not accreditation, with less stringent criteria, standards, and procedures to be evidenced (Tables 1 and 2). Accordingly, the three accreditations offered across each awarding association are more costly. Of these, the IUSCA is the least costly (per annum), with additional courses applied for receiving a 50% fee reduction. The CIMSPA-UKSCA accreditation is over double the cost (per annum) of IUSCA, but every course accredited above a three-course threshold is accredited for free. Finally, the NSCA CASCE accreditation carries the highest cost (per annum) and will also incur additional fees for UK-based courses (e.g., travel and accommodation

for peer reviewers to conduct a site visit). However, a fee reduction can be requested if courses are recognised under the NSCA ERP. Therefore, course representatives (e.g., program directors and senior management) should determine the cost-benefit of which or how many S&C course recognitions and accreditations to acquire. It is believed that courses showing the ability to meet the requirements and criteria outlined by these awarding associations can demonstrate a level of competence, can increase a course attractiveness for prospective students (i.e., increased employability)<sup>9</sup>, and subsequently increase income generation via student enrolment and increased tuition fee funds (except for countries offering free HE such as Scotland).

### *Staff Requirements*

The NSCA recognitions and accreditations require at least one staff member to hold a CSCS certification, additionally, for the NSCA CASCE, each staff member delivering S&C-related content, the program director, and the field experience supervisor must be NSCA CSCS certified. Furthermore, the program director must hold a discipline-related postgraduate degree and meet various administrative and role-specific requirements commensurate with their role and that of peer institutes. The CIMSPA-UKSCA accreditation is less stringent and only requires students to be assessed in specific assessments (i.e., case study) by a UKSCA GSCC or ASCC certified staff member. The IUSCA accreditation requires staff delivering S&C practical elements to hold a S&C related certification, but in contrast to other awarding associations, acknowledges all S&C certifications (i.e., NSCA CSCS, UKSCA ASCC, IUSCA aISCP). Furthermore, the IUSCA accreditation requires a senior staff member to have a discipline-related postgraduate degree and each staff member to have a discipline-related undergraduate degree. These staffing requirements may influence

**Table 4.** Pathway of professional accreditations for strength and conditioning associations.

NSCA	CIMSPA-UKSCA	IUSCA
	S&C trainer	Level 2 certificate in S&C
CSCS	GASCC	Level 4 certificate in S&C
	ASCC chartered member	aISCP
	ASCC chartered fellow	mISCP

*NSCA – the National Strength and Conditioning Association; CIMSPA – the Chartered Institute for the Management of Sport and Physical Activity; UKSCA – the United Kingdom Strength and Conditioning Association; IUSCA – the International Universities Strength and Conditioning Association; CSCS – Certified Strength and Conditioning Specialist; CSCS\*D – Certified Strength and Conditioning Specialist with Distinction; S&C – strength and conditioning; GASCC – Graduate Accredited Strength and Conditioning Coach; ASCC – Accredited Strength and Conditioning Coach; aISCP – Accredited International Strength and Conditioning Practitioner; mISCP – Master International Strength and Conditioning Practitioner.*



departmental decisions about which recognition or accreditation award to pursue as it may result in existing staff obtaining relevant certifications or might become a pre-requisite for new employees. It may be suggested that S&C degrees meeting these staffing requirements will possess the in-house knowledge and expertise to deliver high-quality courses from a theoretical and practical standpoint.

### *Degree Title*

The degree title being indicative of the course specialisation (e.g., BSc in S&C) is only a requirement for NSCA CASCE and IUSCA accreditations. Pending the desired recognition or accreditation route, these stipulations may influence which programs can apply for accreditation, inform a change in an existing degree title, or provide a basis for a newly developed degree title. However, this may lead to difficulties for courses that, in essence, meet the requirements of such accreditations but do not possess an appropriate course title (e.g., BSc Sport and Exercise Science with a S&C pathway). Accordingly, courses considered 'multi-disciplinary' could opt for alternative course endorsements such as the British Association of Sport and Exercise Sciences (BASES) undergraduate endorsement scheme (BUES). Furthermore, with the UKSCA aiming to establish S&C as a protected title, it is uncertain how this will affect course titles and external recognitions and accreditations.

### *Self-Study Requirement*

Only the NSCA CASCE stipulates a self-study requirement for S&C degrees, stating that self-study should be completed over an academic year. This entails students, faculty, administrators, the assessment office, and field experience supervisors demonstrating compliance with professional standards and guidelines. Including all stakeholders within the self-study process is essential as HE relies on the relationship between students' competence, learning and teaching activities, assessment methods, learning outcomes, and eventual employment of graduates<sup>10</sup>. Using different techniques and tools (e.g., analytics, self-study) may inform the continuous improvement of degrees, benefiting all involved<sup>10</sup>.

### *Site-Visit*

The NSCA recognitions (ERP) and CIMSPA-UKSCA accreditation do not require a site visit. Meanwhile, NSCA CASCE and IUSCA accreditations require a

representative from their association to attend the HE institution and validate the S&C degree. The travel, time, and resources needed to complete such site visits are reflected in higher initial application and accreditation fees. The specific requirements for each site visit are beyond the scope of this report and should be explored by course representatives before applying. Interestingly, other disciplines are exploring virtual site visits to circumvent the costs and time associated with in-person site visits<sup>11</sup>, which may be of consideration for awarding associations in the future.

### *Specified Modules, Assessment Content, and Practical Skill Development*

All recognitions and accreditations specify module topics and assessment items that must be included within an S&C degree. For example, it is stipulated that S&C-related practical skills should be taught and developed, which is logical as the ability to demonstrate, coach, and develop athlete's technique in different movements is a characteristic of competent and expert S&C coaches<sup>12</sup>. Note that each recognition and accreditation body also requires a qualified member of staff (i.e., CSCS, ASCC, aSACP) to be associated with the S&C degree and ideally teach or assess practical course elements. Overall, this seems rational to ensure that graduates possess the required knowledge and practical ability for their discipline (e.g., S&C coach)<sup>3</sup>. Therefore, it is essential again for the course representatives to review such requirements before applying for recognition or accreditation. This may lead to minor changes (e.g., revised module content or a new module offered) in an existing course, influence the curricula design of a new course, or require current and incoming staff to possess or obtain relevant professional qualifications.

### *Placements or Supervised Practical Experience*

All recognitions and accreditations (except for undergraduate NSCA ERP) require some form of placement or supervised practical experience. For the postgraduate NSCA ERP recognition, there is no stipulation of the total hours needed for placements or supervised practical experience. In contrast, for the NSCA CASCE, students must undertake 300 hours of supervised practical experience. For CIMSPA-UKSCA, there is no requirement for a placement or supervised practical experience, but students should complete a case study for the minimum duration of three months, which includes engaging a participant and undertaking a final

assessment showing the progress of an individual's performance-orientated goals. For the IUSCA undergraduate and postgraduate accreditations, students must obtain 750 hours of practical experience, which may come in various forms (e.g., placement, coaching, assisting, carrying out testing). Due to time restrictions (i.e., one year course) for master's degree students, they only require 250 hours of practical experience within their degree, with the other 500 hours evidenced before, during, or after course completion. The role of placements is essential in developing undergraduate and postgraduate S&C students<sup>13</sup>, offering unique and different experiences to formal education<sup>14</sup>. This may be of greater importance for students looking to enter the industry than those already industry-embedded<sup>2</sup>. Responsibilities students are exposed to during placements may include coaching, data collection, and setting up equipment, which are all essential skills for S&C coaches<sup>13</sup>. Students who undertake an S&C placement, compared to those who have not, tend to demonstrate greater self-efficacy and workplace skills<sup>15</sup>. Therefore, the general requirements for students to undertake placements or supervised practical experience across recognitions and accreditations could be perceived as critical in developing work-ready graduates.

### ***Development of Transferable Graduate Knowledge and Skills***

The development of transferable graduate knowledge and skills were required by CIMSPA-UKSCA and IUSCA for S&C degrees to obtain accreditation. This broad area is open to interpretation but may include computer literacy and safeguarding skills. Arguably, many courses, particularly those in S&C, will develop such skills. For example, S&C placements and practical experience (which all recognitions and accreditations require, except for the undergraduate NSCA ERP) have been shown to develop students' knowledge, self-efficacy, and transferable workplace skills (e.g., independent learning, teamwork, managing others, oral communication, etc.)<sup>15</sup>. Therefore, this may be a focus for CIMSPA-UKSCA and IUSCA as it could support graduates gaining employment. Furthermore, with the broadened scope of S&C, which now intersects various professions (i.e., data analysts, sports scientists, and educators), there is a potential need for curricula to integrate and develop more transferable skills.

### ***Quality Assurance***

Similarly, CIMSPA-UKSCA and IUSCA accreditations require proof that S&C degrees have qualified internal and external verifiers, tutors, and assessors (an extension of the previously articulated program team qualifications). Whereas CASCE accreditation is considered an external quality assurance process. However, it could be anticipated that university regulations already embed these quality assurance practices.

### ***Learning Environment***

Each accreditation across awarding associations require that appropriate equipment, facilities, and resources are available for students. This is perceived as essential for students to learn specific topics, develop practical skills, and undertake relevant assessments (e.g., coach and perform resistance training movements). While the quality of facilities, resources, and equipment may differ across S&C degrees, it is important that awarding associations articulate these minimum standards and expectations.

### ***Future***

As each S&C association continues to grow and develop, this will likely lead to the advancement of their respective recognitions and accreditations. The latest accreditation to be developed is the NSCA CASCE, with the NSCA stipulating that as of 2030, to be eligible to undertake the CSCS examination, students must have graduated from a program accredited by CASCE. Whether other associations (CIMSPA-UKSCA and IUSCA) will follow a similar path is unknown. Therefore, course representatives should consider the present offerings for recognition and accreditation and how these may change in the future.

### **LIMITATIONS**

The limitations of this study include (a) awarding associations recognition and accreditation information (i.e., criteria, standards, and procedures), and the number of S&C degrees recognised or accredited from the search date outlined in this paper may have changed. Therefore, the data may only reflect the search date and be interpreted as such. (b) Due to the comprehensive information for each awarding association's recognition and accreditation, this was

consolidated and summarised. This may have led to omitted information outside the scope of this report. Therefore, representatives from S&C degrees should carefully read each awarding associations recognition and accreditation information in full.

## CONCLUSION

This is the first study to summarise and report the available recognition and accreditation options for S&C degrees in the UK and to present the number of programs recognised and accredited by each awarding association. The NSCA offers two recognitions (ERP) and one accreditation (CASCE), while CIMSPA-UKSCA and IUSCA offer one accreditation. The most frequent recognition or accreditation obtained across undergraduate and postgraduate courses was the NSCA ERP, followed by CIMSPA-UKSCA and IUSCA. Most courses held 1-2 recognitions or accreditations at the undergraduate level, while at the postgraduate level, this was 0-1. Courses holding these may be attractive to students as they can meet the requirements and criteria outlined by awarding associations. However, if a course is without a professional body award, this does not necessarily reflect the course quality, and the prospective student should review each course individually. Recognitions are inexpensive compared to accreditations due to the less stringent criteria, standards, and procedures to be obtained. Although various discounts are offered for recognitions and accreditations, these are primarily associated with further course applications. Generally, there is a need to have qualified staff who hold discipline-specific undergraduate or postgraduate degrees accompanied with professional qualifications (e.g., NSCA CSCS, UKSCA ASCC, or IUSCA aISCP). The NSCA CASCE and IUSCA accreditations require degree titles to indicate the course specialisation (e.g., BSc in S&C). Only the NSCA CASCE needs courses to undertake a self-study to be accredited, which involves reflecting on their strengths and weaknesses over an academic year. Site visits are necessary for NSCA CASCE and IUSCA to validate and accredit a course. The need for specified module, practical, and assessment items was a consensus across recognitions and accreditations. Only the undergraduate NSCA ERP did not require a placement or supervised practical experience. All accreditations require courses to align with industry standards in S&C, have quality assurance practices in place (e.g., external verifiers), and evidence suitable learning environments (e.g., appropriate

facilities and equipment). The CIMSPA-UKSCA and IUSCA accreditations had an additional requirement that courses develop transferable graduate knowledge and skills (e.g., computer literacy and safeguarding).

## PRACTICAL IMPLICATIONS

The information in this study is valuable for existing and prospective HE course representatives (i.e., program directors and academic staff), students, employers, and awarding associations. The consolidated and summarised overview of recognitions and accreditations for course representatives will allow a quick and efficient view of whether courses currently being delivered or those in development meet the criteria, standards, and procedures of awarding associations. This may influence the curriculum design, continued professional development, and staffing requirements for these respective courses. This information may advise students of the different recognitions and accreditations available and which university course they wish to apply for. Alignment of a course with an S&C association may support a student in obtaining a professional qualification (e.g., NSCA CSCS, UKSCA ASCC, or IUSCA aISCP) and future employment. Employers may use this information to align their job and person specifications for associated roles with the knowledge, skills, and experience that graduates should possess after completing a recognised or accredited S&C degree course. Finally, the awarding associations may compare and contrast their recognitions and accreditations with those of fellow associations. This may lead to awarding associations reviewing and enhancing the awards they offer.

## FUTURE RESEARCH

This paper forms part of a proposed four-paper series, including: (a) a report of undergraduate and postgraduate S&C courses in the UK; (b) an investigation into stakeholders' (course representatives, students, employers, and accrediting associations) perceptions of undergraduate and postgraduate S&C education in the UK; and (c) recommendations for developing undergraduate and postgraduate S&C courses in the UK. It is aimed these papers will be repeated periodically (e.g., every three years) to monitor and assess for longitudinal changes. Future research can replicate the methods outlined in this paper for

other countries (e.g., the United States of America) and disciplines (e.g., sports therapy).

## REFERENCES

1. Weldon A, Duncan MJ, Turner A, Lockie RG, Loturco I. Practices of strength and conditioning coaches in professional sports: a systematic review. *Biol Sport*. 2021;39(3):715-726. doi:10.5114/biolSport.2022.107480
2. James L, Lidums M, Grant M, Talpey S, Comfort P, Suchomel T. Considerations in the development of a postgraduate strength and conditioning program: insights from Australia, the United States, the United Kingdom, and New Zealand. *Strength Cond J*. 2021;43(5):116-122. doi:10.1519/SSC.0000000000000617
3. van Zanten M, Boulet JR, Greaves I. The importance of medical education accreditation standards. *Med Teach*. 2012;34(2):136-145. doi:10.3109/0142159X.2012.643261
4. Vescovi JD, Binkley HM, Kerksick CM. Sports performance graduate program interest and need survey: a brief report from the NSCA education committee. *J Strength Cond Res*. 2004;18(2):383.
5. Bishop C, Mundy P, Hunwicks R, et al. The future development pathway of strength and conditioning: a proposed model from the UKSCA. *Prof Strength Cond*. Published online April 1, 2019:30-34.
6. Alenezi S, Al-Eadhy A, Barasain R, AlWakeel TS, AlEidan A, Abohumid HN. Impact of external accreditation on students' performance: Insights from a full accreditation cycle. *Heliyon*. 2023;9(5):e15815. doi:10.1016/j.heliyon.2023.e15815
7. Vernau J, Bishop C, Chavda S, et al. An analysis of job descriptions and person specifications to define the requirements for obtaining employment within strength and conditioning. *Prof Strength Cond*. Published online March 16, 2021:7-18.
8. York R, Gustin P, Dawson A. What about us? We have careers too! The career experiences of Australian sport scientists. *Int J Sports Sci Coach*. 2014;9(6). doi:https://doi.org/10.1260/1747-9541.9.6.1437
9. Kumar P, Shukla B, Passey D. Impact of accreditation on quality and excellence of higher education institutions. *Investig Oper*. 2021;41:151-167.
10. Hilliger I, Aguirre C, Miranda C, Celis S, Pérez-Sanagustín M. Design of a curriculum analytics tool to support continuous improvement processes in higher education. In: *Proceedings of the Tenth International Conference on Learning Analytics & Knowledge. LAK '20. Association for Computing Machinery; 2020:181-186. doi:10.1145/3375462.3375489*
11. Reddy JS, Sharma R, Gupta N. Virtual accreditation peer review team visits – higher education accreditations: present and future directions. *High Educ Ski Work-Based Learn*. 2023;13(4):813-833. doi:10.1108/HESWBL-06-2022-0140
12. LaPlaca DA, Schempp PG. The characteristics differentiating expert and competent strength and conditioning coaches. *Res Q Exerc Sport*. 2020;91(3):488-499. doi:10.1080/02701367.2019.1686451
13. Read P, Hughes JD, Blagrove R, Jeffreys I, Edwards M, Turner AN. Characteristics and experiences of interns in strength and conditioning. *J Sports Sci*. 2017;35(3):269-276. doi:10.1080/02640414.2016.1161220
14. Stewart P, Maughan P, Turner A. A review of strength and conditioning internships: The UKSCA's State of the Nation survey. *Prof Strength Cond*. 2016;(43):27-33.
15. Weldon A, Ngo J. The effects of work-integrated learning on undergraduate sports coaching students' perceived self-efficacy. *Asia-Pac J Coop Educ*. 2019;20:309-319.