

KIN 515 Gap Analysis (3 credits)

Course Objectives:

Using analytics to obtain, describe and visualize data to create sport profile. Determine optimal programming decisions for coached athletes based on performance pathway and gold medal profile. Apply research methods and nature of scientific inquiry, performance analysis, descriptive, prescriptive and predictive analytics.

Learning Outcomes:

“By the end of the course, students will be able to...”

1. Define and understand the gap analysis process in high performance sport.
2. Describe performance demands of a sport/event using scientific research and analytics derived from performance analysis
3. Describe the Podium Pathway of a high performance program and assess a coached athlete against podium pathway indicators using descriptive, prescriptive and predictive analytics
4. Identify tests and performance benchmarks for gaps in technical, tactical, mental and physical performance factors relative to their stages of excellence.
5. Identify monitoring strategies that measure athlete / team progress to track changes in performance.

Course Format:

The course will have one face-to-face sessions structured around the term (one at the start) and on-going tutorials throughout the terms that coincide and compliment on-line sessions. The course will be mostly delivered online via web-based platforms.

Topic / Sequence	Delivery	Methods / materials
Gap Analysis Processes:	Lecture / Workshop	Lecture
Understanding Analytics: Prescriptive, Descriptive, and Predictive	Lecture / Workshop	Lecture
Research methods and scientific inquiry	Literature Review	Library Search (Assignment)
Gap Analysis – Applied Research	Annotated Bibliography	Lecture Library Search (Assignment)
Podium Pathway- Podium Results Tracking	Workshop presentations	Lecture Student presentation (Assignment)
Gold Medal Profile	Lecture/Workshop	Presentation (Assessment)
Podium Pathway Utilization: Evaluating Athlete/Team using GMP/PRT/WSP		Athlete Evaluation (Assessment)

Course Requirements:
No pre-requisites needed

Assessment, Evaluation, and Grading

Assignment	Percent
<p>Annotated Bibliography – July 30th , 2021</p> <ul style="list-style-type: none"> • Locate relevant and appropriate sources related to a performance gap, and to evaluate their usefulness in a research context. • Relate the performance gap to a specific area of athlete performance • Provide a minimum of seven (7) research articles related to your applied research question / gap 	15
<p>Podium Results Tracking Presentation – Due – November 13th , 2021</p> <ul style="list-style-type: none"> • Student will post online video presentation identifying podium results tracking systems with researched competition results benchmarks for each stage of pathway • Presentation should relate the podium results tracking to the sport’s LTAD ‘excellence stages’. • Provide appropriate references which are supported by research and analytical analysis <p>Student will select a peer(s) presentation to review, critique and provide feedback</p>	30
<p>Journal Review and Critique – Due – Jan 28th 2022</p> <ul style="list-style-type: none"> • Identify a research focus and/or question related to a perceived gap in your sport’s program or athlete/team’s performance. Relate back to a GMP Domain. • Select / Research empirical journal articles related to performance evaluation and/or gap analysis • Review and critique journal articles using assigned template 	10

<p>Gold Medal Profile – Gap Analysis (25 minute Virtual Presentation) – March 25th – 2022</p> <p><i>Development</i></p> <ul style="list-style-type: none"> • Based on Performance Pathway student will develop a Gold Medal Profile for their sport or athlete for a particular stage in the pathway. • Student will consider factors related to ideal, physical, mental, technical, and tactical performance indicators • Student will provide data / evidence for key performance factors and indicated how factors predict ongoing progress in sport • Include ongoing monitoring strategy to assess objective metrics of profile. <p><i>Implementation</i></p> <ul style="list-style-type: none"> • Students will utilize their GMP to undertake an evaluation of an athlete(s). The evaluation should focus on the GMP Factors and indicators developed. • Students should evaluate the athlete(s) using presented Performance Standards where possible, and score the athlete using a scoring matrix. • Students will be required to provide a summative statement regarding the athlete(s) progress on the Podium Pathway and podium potential. 	<p>45</p>
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Rubrics

Annotated Bibliography Rubric

Criteria	Very limited evidence of criterion. Article was read but struggle to understand and articulate key points.	Good evidence . Clear overview of information but lacking scope, depth and application	Excellent Evidence Very good depth and summary of criteria. Exceptional scope, depth and application
Provide at least seven research articles in an annotated bibliography related to performance gap and/or applied research question.	1	2	3
Provide concise description of application to performance gap/question and potential limitations.	1	3	5
Present a well-constructed annotated bibliography with correct reference and summary of research	0	1	2
TOTAL	/ 10		

Podium Pathway Presentation – Podium Results Tracking/Winning Style of Play Rubric

Criteria	Very limited evidence. No analysis of required information and or reflection on relevance to performance pathway	Limited evidence. Required information or statistics lacking. Presentation lacking clarity	Good evidence . Superficial overview of information and or statistics. Good presentation but limited in scope and depth	Very good evidence. Solid overview of statistics and or information. Good presentation	Excellent Evidence Very good depth and summary of statistics. / Information. Very solid presentation, well prepared
Identify the general Podium Pathway context, using the LTAD as a reference and/or other relevant competitions and/or athlete pathway benchmarks.	1	2	3	4	5
Identify key performance benchmarks and prioritizes those that appear to have the highest impact on performance. Provide a podium results trajectory based historical data from past performances for 0-8 years from a podium performance.	2	4	6	8	10
Provide a clear and concise presentation (less than 25 min), presenting a plausible argument that supports the methodology and utility of your Podium Results Tracking/Winning Style of Play to improve podium performance.	1	2	3	4	5
Provide an analysis of a Podium Results Tracking / Winning Style of Play with areas of good work and recommendations for improvements. (PEER CRITIQUE)	2	4	6	8	10
Total:	/30				

Research Article Review

Criteria	Very limited evidence of criterion. Article was read but struggle to understand and articulate key points.	Good evidence . Clear overview of information but lacking scope, depth and application	Excellent Evidence Very good depth and summary of criteria. Exceptional scope, depth and application
1. Identify gaps or trends that exist between current athlete / program and evidence-based research relative to sport specific demands.	1	3	5
2. Review one major piece of research related to the performance gap and provide an overview highlighting relevance to performance gap. Address limitation and relevance to bridging and closing performance gap.	3	5	7
3. What are the implications for applied research in your sport as a potential next step to close the performance gap. What would be the methodology and focus of a proposed applied research? Performance benefit? Risks to the applied research?	3	5	7
4. Ability to provide a well-constructed applied research application. Clearly written and applied to the context of performance.	2	4	6
TOTAL	/ 25		

Podium Pathway Presentation – Gold Medal Profile Rubric

	Very limited evidence. No analysis of information or reflection on relevance to sport.	Limited evidence. Required information presented is partially lacking.	Good evidence and information. Superficial overview. Presentation is limited in scope and depth.	Very good evidence and information. Evidence of thorough research and analysis. Good presentation.	Excellent presentation and evidence. Deep analysis and evidence is well-prepared and defended.
Part A					
Identify and describe GMP physical factors and indicators.	1	2	3	4	5
Identify and describe GMP tactical factors and indicators.	1	2	3	4	5
Identify and describe GMP technical factors and indicators.	1	2	3	4	5
Identify and describe GMP psychological factors and indicators.	1	2	3	4	5
Identify and describe any other GMP factors and indicators and/or explain the selection of the only tactical,	1	2	3	4	5

technical, physical and psychological.					
Part B				TOTAL	25
Undertake a gap analysis using the GMP for athlete(s), identifying gaps based on GMP using scoring matrix against Performance Standards.	1	2	3	4	5
Evidence of Performance Standards and thorough evaluation process.	1	2	3	4	5
Summary of athlete(s) progression on Podium Pathway based on GMP/PRT/WSP evidence.	1	2	3	4	5
				TOTAL	15

2020-2021 Schedule

Block 1

Date Period	Module	Topic	Delivery Format	Date	Presenters
Residential June	1	What is Gap Analysis and its Relevant to HP Sport? <ul style="list-style-type: none"> Identify the gap? Developing the research question 	Virtual	Residential June 8 th , 2021	Dr. Andy Van Neutegem
	2	Sport Analytics <ul style="list-style-type: none"> Application in HP Sport Relevance to closing the performance gap 	Virtual	Residential June 9 th 2021	Dr. Andy Van Neutegem
	3	Podium Pathway <ul style="list-style-type: none"> Introducing Podium Pathway Concepts: GMP & PRT/WSP PRT/WSP: Applications in Sport 	Webinar	June 17 th 2021 5 pm PST	Dr. Andy Van Neutegem
July	4	Understanding and Applying Statistics in Sport <ul style="list-style-type: none"> Basic Statistics Interpreting statistics Using software to manage statistics 	Webinar/Online – CSI Pacific Presenter Online Presentation/ Discussion	June 24 th , 2021 5 pm PST	Dr. Trent Stellingwerff Webinar Dr. Andy Van Neutegem Webinar
		Assignment Due	Literature Review & Annotated Bibliography	Friday July 30th 2021	

Block 2

Date Period	Module	Topic	Delivery Format	Date	Presenters
September	5	Understanding Podium Results Tracking/Winning Style of Play <ul style="list-style-type: none"> • Performance Standards • Progression Analysis • Data Storage/Management 	Webinar/Online: Lecture	Sept 23 rd , 2021 5-7 pm PST	Dr. Andy Van Neutegem
October-December	6	Implementing Podium Results Tracking/Winning Style of Play <ul style="list-style-type: none"> • Performance Standards • Progression Analysis • Data Storage/Management 	Webinar/Online: Lecture	Sept 30 th , 2021 5-7 pm PST	Dr. Andy Van Neutegem
	7	Understanding Gold Medal Profiling (GMP) <ul style="list-style-type: none"> • What is it? Why do we need it? • Individual vs Team Sport GMP • Assessing and Monitoring Key Performance Indicators 	Webinar/Online: Lecture	Oct 7 th , 2021 5-7 pm PST	Dr. Andy Van Neutegem
		Assignment Due	Podium Results Tracking/Winning Style of Play	Nov 13th 2021	

Block 3

Date Period	Module	Topic	Delivery Format	Date	Presenters
January	8	GMP – Assessing Gaps in Physical Readiness <ul style="list-style-type: none"> • Physical testing parameters • Sport Specific Applications • Technology Implementation 	Webinar / Online: Online Presenter Webinar/Online: Presentation/Discussion	January 20 th 2022	Dr. Trent Stellingwerff Webinar Dr. Andy Van Neutegem
	9	GMP – Assessing Psychological Readiness and Gaps <ul style="list-style-type: none"> • Objectifying Mental Performance • Tools and Templates to assess athlete mental state. 	Webinar / Online: CSI Pacific Presenter Webinar/Online: Presentation/Discussion	Thursday Jan 27 th 2022	Dr. Bruce Pinel Webinar Dr. Andy Van Neutegem
Feb	10	GMP – Assessing Tactics and Technical Abilities <ul style="list-style-type: none"> • Using Video Analysis • Notational Analysis • Biomechanical Evaluation & Applications 	Webinar / Online: CSI Pacific Presenter Webinar/Online: Presentation/ Discussion Online Quiz	Feb 3 rd 2022	Patrick Cote CWSA Dr. Andy Van Neutegem
	11	GMP – Applications <ul style="list-style-type: none"> • Individual Athlete Profiles • Athlete Monitoring Systems 	Webinar/Online: Presentation/ Discussion Online Quiz	Feb 10 th 2022	Dr. Andy Van Neutegem
May	12	GMP Presentation (no longer than 25 minutes)	Virtual Presentation- March 25 th 2022	TBA	

Required & Recommended Readings:

Sport Analytics

Coleman, B. Jay (2012) Identifying the “Players” in Sports Analytics Research. *Interfaces* 42(2):109-118.
<http://dx.doi.org/10.1287/inte.1110.0606>

Davenport, T. H. (2014). What businesses can learn from sports analytics. *MIT Sloan management review*, 55(4), 10-13.

Davenport, Thomas H. (2014) *Analytics in Sports: The New Science of Winning*. White paper available with registration at www.sas.com/sportsreport.

Davenport (2013) *Competing on Analytics: The New Science of Winning*, *Journal of Information Technology Case and Application Research*, 15:4, 59-61, DOI: 10.1080/15228053.2013.10845729

Ferguson, Renee Boucher (2013) *Team GB: Using Analytics (and Intuition) To Improve Performance*. *MIT Sloan management review* 54(3):1

Performance Pathway, LTAD and Gold Medal Profiling

Abbott, Angela & Dave Collins (2004): Eliminating the dichotomy between theory and practice in talent identification and development: considering the role of psychology, *Journal of Sports Sciences*, 22:5, 395-408

Collins, D. MacNamara, Áine (2012). The rocky road to the top: why talent needs trauma. *Sports medicine (Auckland)*, 42(11), 907-914.

Collins, Rosie; Collins, Dave; MacNamara, Áine & Jones, Martin Ian (2014) Change of plans: an evaluation of the effectiveness and underlying mechanisms of successful talent transfer, *Journal of Sports Sciences*, 32:17, 1621-1630

Collins, Dave & Richard Bailey (2012): 'Scienciness' and the allure of secondhand strategy in talent identification and development, *International Journal of Sport Policy and Politics*, DOI:10.1080/19406940.2012.656682

Côté, Jean; Lidor, Ronnie & Hackfort, Dieter (2009): ISSP position stand: To sample or to specialize? Seven postulates about youth sport activities that lead to continued participation and elite performance, *International Journal of Sport and Exercise Psychology*, 7:1, 7-17

Ford, Paul; De Ste Croix, Mark; Lloyd, Rhodri; Meyers, Rob; Moosavi, Marjan; Oliver, Jon; Till, Kevin & Williams, Craig (2011): The Long-Term Athlete Development model: Physiological evidence and application, *Journal of Sports Sciences*, 29:4, 389-402

McCarthy, Neil & Collins, Dave (2014) Initial identification & selection bias versus the eventual confirmation of talent: evidence for the benefits of a rocky road?, *Journal of Sports Sciences*, 32:17

Wilson, Greg (2012) The London Olympic Games 2012: Points of Interest for the Development of Elite Sport in Australia, *Journal of Australian Strength and Conditioning* 20(3): 9-14

Academic Integrity

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the

President's Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences. A more detailed description of academic integrity, including the University's policies and procedures, may be found in the Academic Calendar at

<http://calendar.ubc.ca/vancouver/index.cfm?tree=3,54,111,0>.

[Recommended for inclusion: instructor contact information and office hours (if known), class meeting time and location (if known), additional resource readings, accommodations for students with disabilities]