

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. Describe performance demands of sport/event coached using scientific research and analytics derived from performance analysis
2. Describe the Gold Medal profile of coached athlete relative to stage in podium pathway using descriptive, prescriptive and predictive analytics
3. Develop and implement for coach’s program/context, sport specific strategies for athlete identification, talent development, transfer and selection that are consistent with scientific principles and NSO/PSO guidelines
4. Identify and test for gaps in technical, tactical, mental and physical performance factors relative to their LTAD stage
5. Identify monitoring strategies that measure athlete / team progress to track changes in performance

Course Format:

The course will have two face-to-face sessions structured around the term: one at the start and one at the end. The first will serve as an orientation and the second one as a debrief. Meanwhile, 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		Library Search (Assignment)
Podium Pathway- Podium Results Tracking	Workshop presentations	Student presentation (Assignment)
Gold medal Profile	Workshop	
Technology and Athlete/Team Evaluation	Lecture/Workshop	Assignment/Peer Critique
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>Journal Review and Critique – Due – July 14th 2017</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. • Select / Research empirical journal articles related to performance evaluation and/or gap analysis • Review and critique journal articles using assigned template 	<p>15</p>
<p>Podium Results Tracking Presentation – Due – November 10th 2017</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 • Student will select a peer(s) presentation to review, critique and provide feedback 	<p>25</p>
<p>Gold Medal Profile – Gap Analysis – TBA – May 2017 (Part A)</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>40</p>

<p>Gold Medal Profile – Gap Analysis – TBA – May 2017 (Part A)</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>10</p>
<p>Online Quizzes – variable dates</p> <ul style="list-style-type: none"> • Complete a number of online quizzes to reinforce key concepts covered in presentations. See Quiz Schedule. 	<p>10</p>

Rubrics

Article Review and Critique 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
1. Identify gaps or trends that exist between current athlete / program and evidence based research relative to sport specific demands.	1	3	5
2. Critically reflects on the efficiency of certain established or common practices and procedures within the sport	1	3	5
3. Determines if trends or results observed evidence based research are generalized with the sport.	1	3	5
TOTAL	/ 15		

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
Relate pathway to sport specific LTAD and provide matrix of: (a) general and sport specific skills and abilities ; (2) recommended sport program elements (i.e. number of competitions, practices, hours, type and volume of activity) Sources? LTAD excellence stages? Data mining / tracking?	1	2	3	4	5
Identify key metrics from observations / research and prioritizes those that appear to have the highest impact on performance	1	2	3	4	5
Identify benchmarks for each stage of the pathway with appropriate goals or measure for each benchmark.	1	2	3	4	5
Develops and implements measures, criteria, and procedures that produce a fair, transparent, and ethical process for athlete identification and recruitment in their program. Utilization?	1	2	3	4	5
Identify and prioritize one (or more) gaps that exist between current program, and ideal recommendation based on sport's LTAD.	1	2	3	4	5
Identifies how coaches, clubs, and other individuals involved in the development stream can monitor the progress of athletes identified through the performance pathway (PEER CRITIQUE)	1	2	3	4	5
Total:	/30				

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, technical, physical and psychological.	1	2	3	4	5
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.					
Evidence of Performance Standards and thorough evaluation process.					
Summary of athlete(s) progression on Podium Pathway based on GMP/PRT/WSP evidence.					
				TOTAL	15

2017-2018 Schedule

Block 1

Date Period	Module	Topic	Delivery Format	Date	Presenters
Residential June	1	Podium Pathway <ul style="list-style-type: none"> • Introducing Podium Pathway Concepts • Podium Pathway – LTAD Context 	Face to Face	Residential June 14-15	Dr. Andy Van Neutegem
	2	Introduction to Analytics and Gap Analysis <ul style="list-style-type: none"> • What is analytics? • Analytics in other domains • Gap Analysis in Sport 	Face to Face	Residential June 14-15	Dr. Andy Van Neutegem
	3	Reviewing the Literature & Defining A Research Question <ul style="list-style-type: none"> • Identifying the research question(s) • Reviewing the Literature • Writing a Literature Review • Identifying the purpose / question 	Face to Face	Residential June 14-15	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 Online Quiz	Week of: Monday July 3 rd Thursday July 6 th – 5:00 pm Pacific Time	Dr. Trent Stellingwerff Webinar Dr. Andy Van Neutegem Webinar

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	Thursday Sept 28 th 5:00 pm Pacific Time	Dr. Andy Van Neutegem
October-December	6	Understanding Podium Results Tracking/Winning Style of Play <ul style="list-style-type: none"> • Performance Standards • Progression Analysis • Data Storage/Management 	Webinar/Online: Lecture	Thursday Oct 5 th 5:00 pm Pacific Time	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	Thursday Oct 12 th 5:00 pm Pacific Time	Dr. Andy Van Neutegem

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: CSI Pacific Presenter	Week of Jan 15 th	Dr. Trent Stellingwerff Webinar
			Webinar/Online: Presentation/Discussion	Thursday Jan 18 th 5:00 pm Pacific Time	Dr. Andy Van Neutegem

	9	<p>GMP – Assessing Psychological Readiness and Gaps</p> <ul style="list-style-type: none"> • Objectifying Mental Performance • Tools and Templates to assess athlete mental state. 	<p>Webinar / Online: CSI Pacific Presenter</p> <p>Webinar/Online: Presentation/Discussion</p>	<p>Week of: Tuesday Jan 22nd</p> <p>Thursday Jan 26th 5:00 pm Pacific Time</p>	<p>Dr. Bruce Pinel Webinar</p> <p>Dr. Andy Van Neutegem</p>
	10	<p>GMP – Assessing Tactics and Technical Abilities</p> <ul style="list-style-type: none"> • Using Video Analysis • Notational Analysis • Biomechanical Evaluation & Applications • Individual Athlete Profiles 	<p>Webinar / Online: CSI Pacific Presenter</p> <p>Webinar/Online: Presentation/ Discussion Online Quiz</p>	<p>Week of Jan29th</p> <p>Thursday Feb 1st 5:00 pm Pacific Time</p>	<p>Patrick Cote CWSA</p> <p>Dr. Andy Van Neutegem Webinar</p>
May	11	GMP Presentation	Virtual Presentation	TBA	

Required and 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

Fry, Michael J., Ohlmann, Jeffrey W., (2012) Introduction to the Special Issue on Analytics in Sports, Part I: General Sports Applications. *Interfaces* 42(2):105-108. <http://dx.doi.org/10.1287/inte.1120.0633>

Fry, Michael J., Ohlmann, Jeffrey W., (2012) Introduction to the Special Issue on Analytics in Sports, Part II: Sports Scheduling Applications. *Interfaces* 42(3):229-231. <http://dx.doi.org/10.1287/inte.1120.0632>

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

Balyi, Istvan and Richard Way, Colin Higgs (2013) Long-term athlete development. Human Kinetics Pub.

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]